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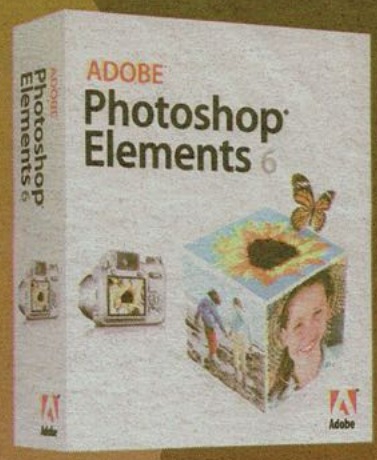
November 2007 Volume 20 Number 11 Free



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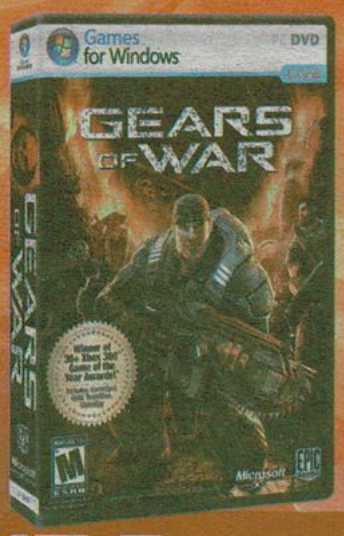
Managing your crucial cryptograms



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Epic's Gears Of War

IT Forensics
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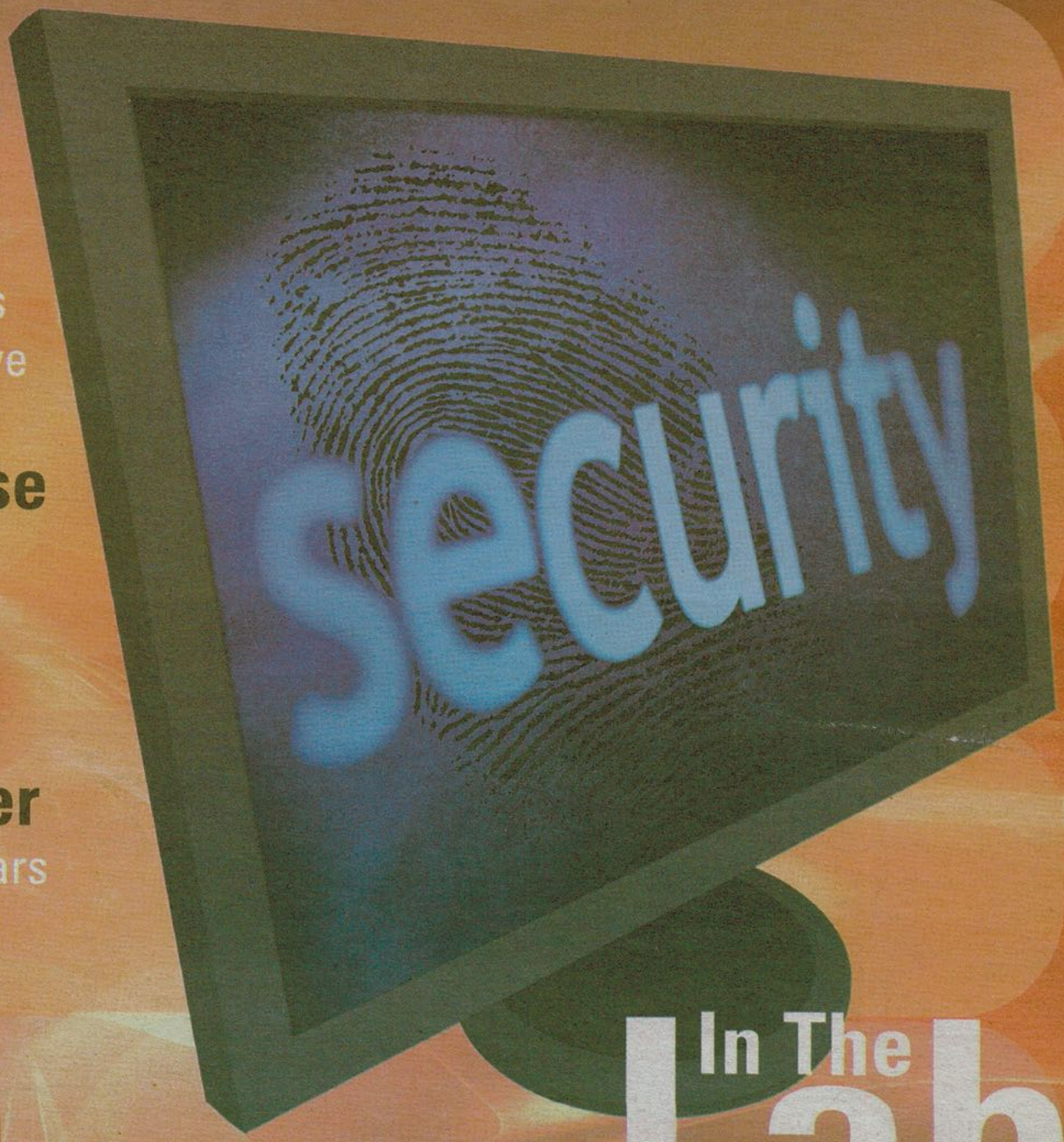

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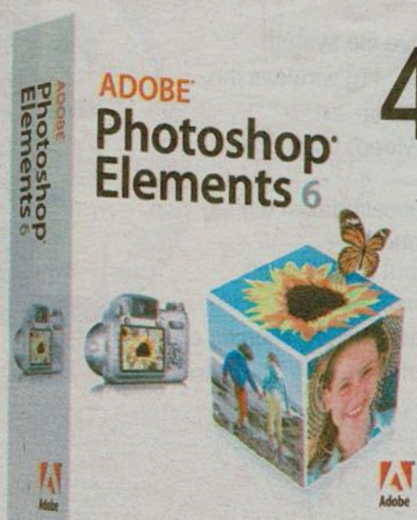

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How secure do you feel? More to the point, perhaps, is how secure should you feel?

We here at HUB: The Computer Paper are not the fear mongering sort. We're not about to tell you that all of your online communications are being monitored, that identity thieves have easy access to your sensitive data, that people are going in to your Microsoft Office documents to see just how bad your first, pre-spell check draft was or that when putting your old PC up for sale, your bank account will be drained and your personal credit forever affected by the person that you sold or gave it to. What we will tell you is that all of these things are possible and that you should be a least as careful in your virtual life as you are with your real world one.

You wouldn't sell a filing cabinet at next summer's yard sale with all your bank and credit card statements in it, would you? No need to answer that of course. It's called rhetoric and we're not above using it. The same logic applies when you're selling or otherwise getting rid of a computer or data storage device. Perhaps you should have a read of our article on free and not-so-free data shredders that ensure your files are gone, never to be seen again.

By the same token, you wouldn't staple all the previous drafts of a legal letter or contract you're sending so that the recipient could see all the mistakes, all the back and forths, the thinking and rethinking of important points. Likewise, sending a Word document with all this information available for viewing by anyone possessing the wherewithal to find it is unwise... especially given that those with the wherewithal are just the sort of people you don't want to be seeing the offending first draft.

If you're reading these words and are a regular reader of HUB: The Computer Paper (thanks, we're glad) then we can assume a certain level of tech savvy. However, none of us are immune to silly computing mistakes that, in the worst case scenario, can put our personal lives at risk. In fact, the saying "a little knowledge is a dangerous thing" applies here. The truth of the matter is that there is so much knowledge out there, none of us mere mortals can truly hold but a little of it. So while Marc Saltzman's look at top email hoaxes and why other people (it's always other people) fall for them may not relate to you directly, we've all been on the other side of the fence. And it's at least anecdotaly true that there's a sucker born every minute. The truth of the matter is, knowing a hoax email on its face only really comes with experience. All too often of the bitter variety. You may have brought up the "fact" that Coca-Cola has a variety of industrial applications and is even used in particularly gruesome motor vehicle accidents to clean blood stains from the road in a conversation. You may have been told by someone then more savvy than you that the particular email you were referencing was, in fact, a hoax.

And that's just a mundane example; save a little social embarrassment, the above scenario is no harm done. However, fall for one of the so-called "Nigerian" or 419 email scams, whose notoriety now extends well beyond Nigeria, and you've got a much bigger problem on your hands. In truth, these scams–that promise a significant share of an untold wealth if you'll just cooperate and grease the wheels–have their roots in the pre-digital age, starting out as hard-copy letter campaigns. However, the ease of sending the letters out via email meant that the scam really came in to its own with the low-cost, hassle-free means of hitting hundreds of thousands of people via email. These same scams still proliferate online, whether it's a UK lottery you've won, a dying man's last wish to give a monetary gift to a church while using you as a tax shelter or whatever scenario can be dreamed up, these scams will continue as long as there are people to be scammed.

It pays to maintain the keen eye of a skeptic. Heck, even Wikipedia, the oft quoted source in high school essays and an example of the power of the online community, has demonstrated that its best feature is also its Achilles heel. Allowing just about anyone to change entries on the venerable social encyclopedia opens the information source up to a whole lot of disinformation. Some household name companies, media outlets and people have been logged making changes that cast a better light on themselves or a worse one on competitors. This went beyond fact correction or flagging and included, in some cases, rewriting of sentences, phrases or entire paragraphs to be more friendly to the organization or person making the change and less so to competitors. While long understood as a fact of life by the more cynical among us, it took a tool like Virgil Griffith's WikiScanner (http://wikiscanner.virgil.gr/) to bring some of the more egregious of the edits to light. And some of these edits tell quite an interesting story.

The point is that, while there's a whole world of information available online, there's a wealth of disinformation too. While it's not yet time to don our tinfoil hats, the time is always right to ask a few more questions than might come naturally. And it never hurts to keep a bit of extra tinfoil on hand... y'know, just in case.

I would like to take this opportunity to say a very sincere thank you to David Tanaka for stepping into the role of Editor at Large of HUB: The Computer Paper (formerly, HUB: Digital Living). David is an important part of the team and so I'm very pleased to announce that he will continue to work with us as from his home in Lethbridge, Alberta. He will continue to offer his expert voice in articles throughout HUB: TCP and we'll get to read his thoughts on the industry "at large" (how apropos) with his "the last byte" column, which will appear on the last editorial page of the magazine every month.

Enjoy the issue,
Andrew Moore-Crispin

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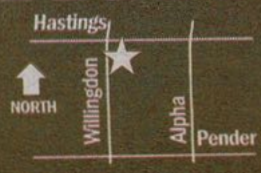

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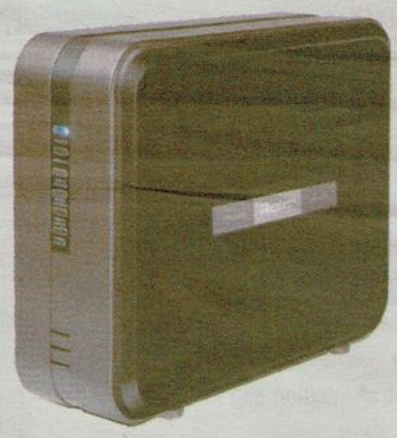

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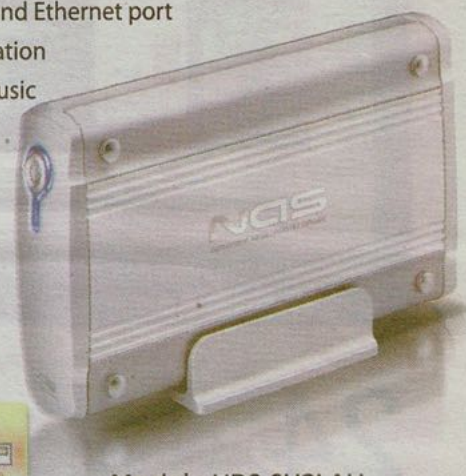

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MEDIAGATE
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MG-35 is an advanced hard drive digital media player with network function available on the market.

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- Support USB 2.0 slave
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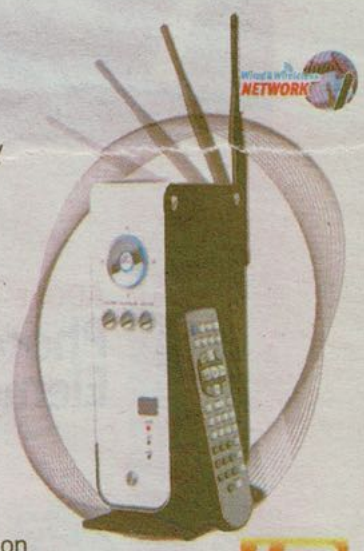
- Support stereo L/R, optical/coaxial digital audio, analog 5.1 channels
- Support JPEG still picture
- Support file surfing from multiple sources on TV using a remote controller.

Model : MG-35 NDAS

MG-350HD is one of the most advanced hard drive HD digital media player with build-in wireless network function build-ready for the market.

Features:

- Support NTFS hard drive file system
- Support 10/100 wire lan, 11g wireless lan
- Support USB2.0 slave/host
- Support composite, S-video, component video outputs
- Support stereo L/R, optical/coaxial digital audio, analog 5.1 channels
- Support DVI video output (HDMI is an optional feature if the user has the cable)
- Support file surfing from multiple sources on TV using a remote controller.



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Ubuntu 7.10 official release

One of the most highly regarded and most accessible Linux installations currently available, the most recent full release of Ubuntu and all its derivatives hit official download locations on Oct. 18.

Among the additions and improvements are an enhanced user interface, improved hardware support, multi-monitor support and an integrated desktop search.

Download locations in Canada and the US were apparently logging heavy traffic while official torrents logged thousands of seeds and peers on the first day of official release. We were hard pressed to get better than 25KB/sec which translates to a download time of about 8hr for the nearly 700MB file.

In addition to the official release of the core Ubuntu system, Kubuntu (a KDE-based install), Edubuntu (a bundling of useful educational enhancements) and Server editions all received the refresh, developed under the codename "Gutsy Gibbon."

Highlighted Features of Ubuntu 7.10 Desktop Edition

The latest version of Ubuntu includes the following new features:

- Hardware management improvements - Improved plug-and-play configuration for printers, as well as automatic firmware installation for Broadcom cards
- Improved support for display systems - For laptop users, full support external VGA (projector) support is available out-of-the-box with easy reconfiguration when hardware is switched. For power users, this release includes the ability to manage multiple monitors.
- Windows compatibility - Users with a dual partition can read from and and write to files that are on located in a Windows partition (including NTFS)
- Enhanced user interface – Simple 3D screen effects and graphics enhance the user experience
- Desktop search – Gives users the ability to search their entire desktop, whether for files, folders, chat logs or photos. This capability includes the deskbar applet, a central location on users' desktops for all local and web search operations.
- Firefox plugins - Automatic installation of popular Firefox plugins validated by Ubuntu for a richer, safer web-browsing experience

Price Cut Fever for Playstation 3

"If you cut it, they will come" seems to be the logic behind a PS3 price cut, announced recently.

Leading up to the all-important holiday buying season, Sony Computer Entertainment America Inc. (SCEA) saw its way clear to cut the price of its Playstation 3 game console already on the market while introducing a new, value-oriented bundle that includes a 40GB hard drive. The existing 80GB model received a price cut bringing it to $499, a full $100 less than the original launch price. The 40GB model is available for another $100 less with a sticker of $399. In addition to a growing library of games both on shelves and planned, SCEA is clearly hoping to spark interest in its console as it's lost mind-share and market-share to competitors in the current console battle.

These new shelf prices stand for both the US and Canadian markets; if nothing else, SCEA at least looks as if its being vanguard in addressing the current parity of US and Canadian currency.

Saving your digital life

Securing your notebook computer

Okay, so you have most of your digital life housed in that three kilogram clamshell known as your notebook computer. What can you do to keep it safe? The value of your notebook is held in two areas. The physical notebook itself and the commercial software applications you've purchased have a monetary value that can be established and insured. But then there's the data it contains whose value is much harder to measure – a digital photo, video production or half-finished novel may be priceless to you, but not even covered by insurance, for example. You need to look at protecting both.

Kensington MicroSaver Retractable Notebook Lock

Shopping with protection in mind

You can start this process even before buying a new notebook by thinking about how you use the computer, and then looking for products that have the features that will best serve your needs. Are you a rough and tumble kind of user? Some notebooks are ruggedized so that they are able to withstand a fair amount of physical abuse. One standard feature of a ruggedized computer – and also available on many standard notebooks – is built-in hard drive protection in the form of shock-absorbing gel mounts, or accelerometers that detect sudden motions and park the hard drive heads before they touch the platter surface, destroying the drive. All Panasonic's ToughBooks are ruggedized but to greater or lesser degrees depending on the model, and some standard features include shock protected hard drives, magnesium alloy bodies and flexible membrane screens.

Do you slurp and sip while you compute? Some premium models of Lenovo (IBM) ThinkPads include a waterproof membrane under the keyboard, a shallow tray that has a drain hole – so you can spill a half a cup of coffee on the keyboard and it will collect, then drain out the bottom without getting into the electronics.

ThinkPads were also one of the first notebook computers to include an embedded fingerprint reader, although other manufacturers now offer this feature. The fingerprint reader is a biometric stand-in for the password. Other computers, usually those aimed at corporate users where data security is taken very seriously, have built-in data encryption so if a notebook is lost or stolen, sensitive corporate data on the hard drive will be encrypted and therefore inaccessible to thieves.

Many new notebooks are also available with a built-in tracking system. Vancouver, BC-based Absolute Software Corp. has been signing deals with many major notebook manufactures so you can now buy some new computer models with the Computrace tracking software built in. Absolute sells a multi-facetted security solution for corporate customers, but also has a solution aimed at consumers and small business users called Computrace LoJack. A small program called the Computrace Agent is at the heart of the system. Whenever the computer is online, it sends out a signal revealing its location to the Absolute monitoring station. If the computer is reported stolen, that signal can be used to locate the computer. Because some of the Agent is written to the computer's system BIOS, reformatting or replacing the hard drive won't defeat it. For corporate users, Absolute has a number of other security solutions, including giving IT departments the ability to remotely delete sensitive corporate files on notebooks that have gone astray.

Aftermarket protection

Common sense would say that to avoid all those potential headaches, protect your notebook while it is still in your possession. All notebooks come with a security slot, which is a standardized hole in a reinforced area of the notebook. Standardization means that you can buy notebook cable locks from a variety of manufacturers that will fit. Cable locks have been around nearly as long as notebook computers themselves and are a simple, cheap method of deterrence. These are handy if you use your computer in a public place like a library or coffee bar, allowing you to get up and briefly leave your notebook. Another device that also exploits the notebook's security slot is the motion sensing alarm. This device attaches to the computer and is equipped with a motion detector so if someone picks it up, the alarm is triggered. There are a number of vendors that make such alarms, including Targus, APC and Kensington.

The notebook computer is vulnerable to theft because it is an attractive target, but loss of the data the notebook contains can be even more devastating, particularly if it is confidential government or corporate information. Safend (www.safend.com) specializes in securing the computer in another way. It's slogan, "securing your endpoints," nicely sums up the focus, which is to protect wireless connections as well as physical ports like USB. The development of physically small USB thumb drives with huge capacity gives thieves the means to pull large amounts of data from an unattended desktop or notebook computer quickly and without drawing too much attention to their activities.

Safend software allows you or your system administrator to set policies on the devices that are allowed to connect to your wireless or hard (e.g., USB, Firewire) ports in broad or specific ways. For example, you could block all USB memory devices, or allow only ones that have a specific serial number identification.

We've heard so much about virus and worm attacks and data theft over the past decade that every computer user should know this, but it bears repeating: you need to use security software on your computer. The nature of malware has changed – and continues to evolve – and the security software vendors also continue to evolve their products.

By David Tanaka

Checkpoints for securing your notebook

Buy with your needs in mind – ruggedized notebooks offer extra measures of durability; built-in security features like fingerprint readers, encryption of data files and location tracing are available on new notebooks.

A cable lock system allows you to leave your notebook momentarily and discourages grab and run opportunists. Port blockers keep data thieves from stealing your files by inserting a memory key and downloading files or folders.

Security software: an old story, but still a necessary one.

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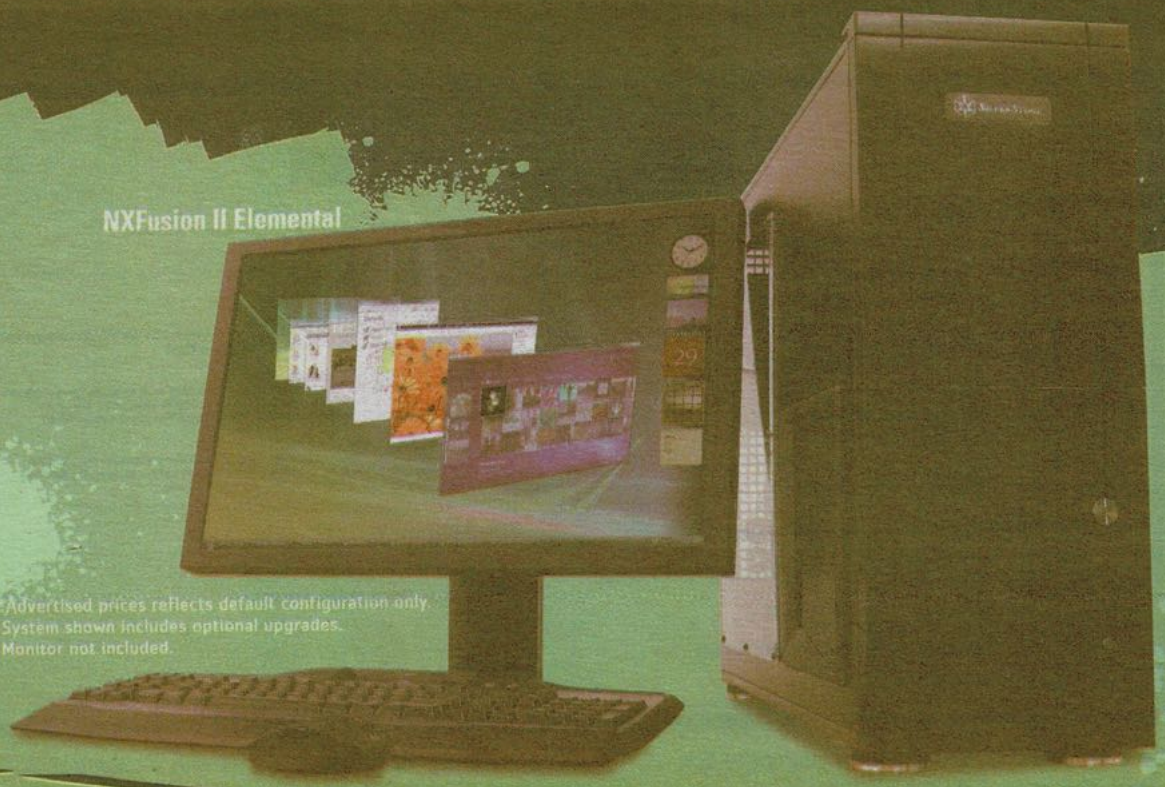

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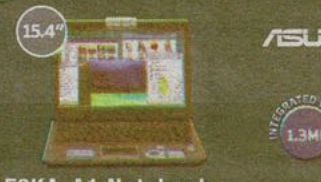

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Don't believe the hype

Why email hoaxes still work

Admit it – you were once fooled by one of those email messages that promises cash for forwarding messages to everyone you know.

Don't worry. You're in good company.

There are literally thousands of email hoaxes floating around cyberspace and some of them can be really convincing. Most are relatively harmless pranks spread through cyberspace with the intent to trick the recipient into believing something is genuine when it is not; a practical joke for the digital age. Hoaxes, practical jokes, urban legends and chain letters existed long before the Internet, of course, but we've never seen the magnitude we do now thanks to email and the speed at which it can disseminate information... or disinformation, as the case may be.

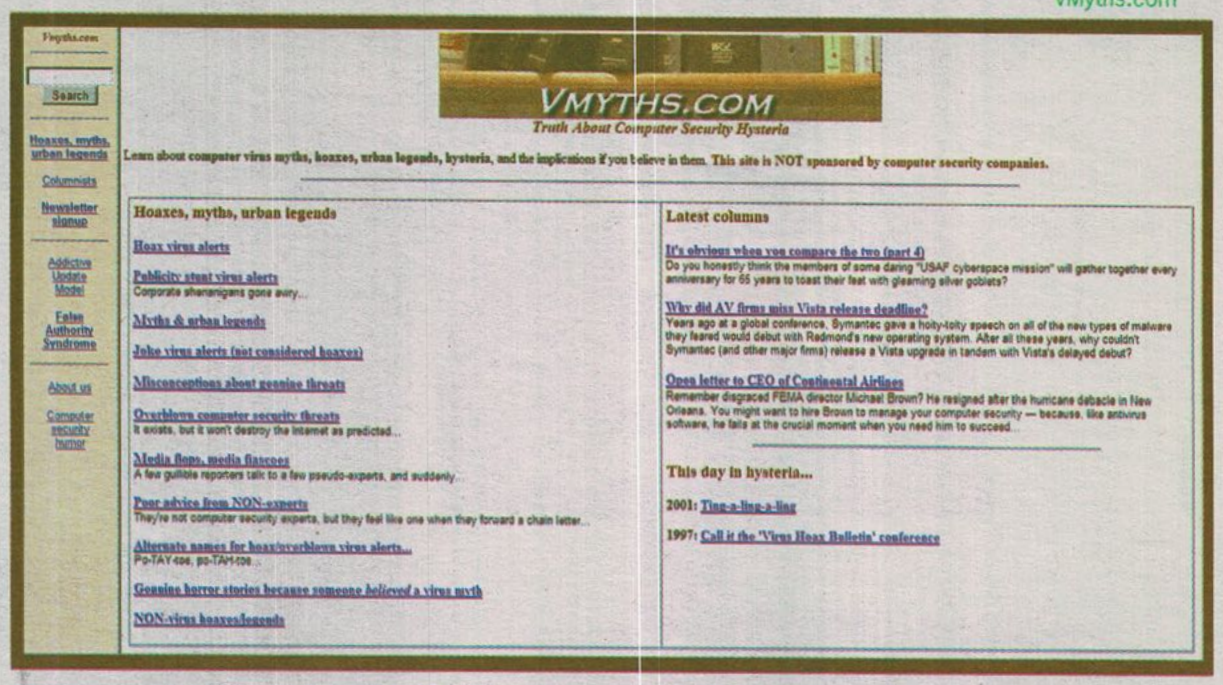
But let's take a closer look at why we tend to fall for them.

First of all, many hoaxes are very well written so they sound realistic and play social engineering tricks to pull at your heart strings to elicit a response; like the ones that ask you to look at a picture of an eight-year-old girl who's been recently abducted. Also, when it's a friend who emails you as opposed to a complete stranger, you're more likely to believe it, right? Of course.

Often, these forwarded emails will prey on your emotions. "Canadians have a deserved reputation as good-natured people who believe in the basic goodness of people" says Carmi Levy, Senior Vice President of Strategic Consulting at AR Communications, a Toronto-based marketing communications firm. "So, it wouldn't surprise me if we were a little less jaded, a little less likely to pitch the message into the trash folder without at least taking a quick look, just in case," Levy adds.

Some email hoaxes are believable because they're signed by an authoritative source such as the president of an international bank or the producer of the Oprah show trying to dismiss a rumour about the host's off-camera antics. And when an email is signed by a supposed doctor who tells you not to lick envelopes at your local ATM because a maniac is putting poison on them, people are more likely to bite (as opposed to lick).

VMyths.com



Oh, and have you noticed that some of these hoaxes contain testimonials like "My cousin did this and she got her cheque in five weeks. It's true!" Sorry, but it's not. Similarly, printable "gift certificate" hoaxes are another common one, promising a discount at Old Navy, Roots, The Gap or a restaurant.

"Hope springs eternal no matter how old or young you are – if someone promises a world of great wealth, no taxes, eternal health and other touchstones of perfection, we all want to believe in it at some level, even if our sense of logic tells us otherwise," explains Levy. In short, if it sounds too good to be true, it probably is.

Also bear in mind when you read a hoax that's been localized to your neck of the woods, it can be more convincing. Someone who met with a catastrophic demise when using their cell phone while pumping gas may sound silly, but when the email you received said it happened in your city or province three weeks ago and was in "all the papers," it sounds more convincing. Unless, of course, you read "all the papers."

"Of course, the cynic in me thinks back to PT Barnum's famous conclusion that there's a sucker born every minute," adds Levy. "By that logic, the scammers have a fresh new batch of 1,440 potential victims each and every day – and since every large population group contains a tiny minority that's gullible enough to fall for it, the scammers never lose their incentive to keep sending us junk." "As long as they get even the tiniest response rate, they'll keep at it."

Ever been promised $14 million dollars from an African businessman who needs your help to bring the funds into the country. Well, that one's legit. We're still waiting on our cheque though. Perhaps a follow-up email is in order.

Chain letters, on the other hand, ask you to help spread the word and forward the message onto others. Allegedly, many Americans fell for this one:

"This Friday night at 7:00 p.m. EST step out your door, stop your car, or step out of your establishment and light a candle to show that America is strong and united together against terrorism. NASA will be taking a satellite picture and posting it on the news Saturday morning. Please pass this to everyone on your email list. We need to reach everyone across America quickly."

What? You didn't know a satellite picture can detect candles?!

OK, don't be embarrassed. There are a handful of good web sites that will either confirm or debunk these chain-letter or urban myth-like emails you and your family members or friends have been getting.

If you're not sure what's a hoax or not, take a look at web sites like Hoaxbusters (http://hoaxbusters.ciac.org/), Snopes (www.snopes.com) or VMyths (www.vmyths.com).

And let's stop being so gullible!

By Marc Saltzman

Snopes.com

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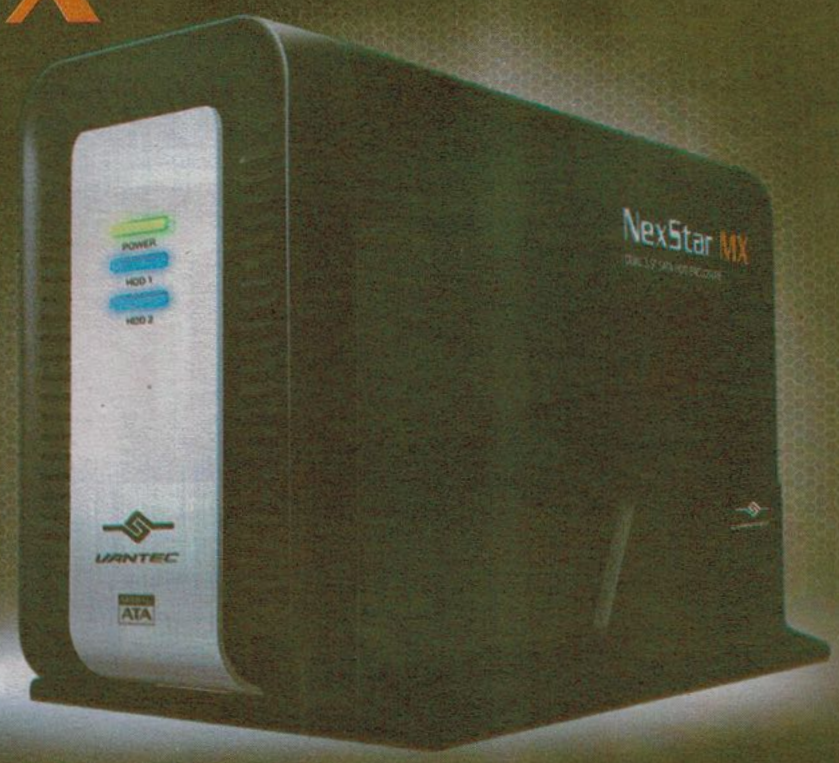

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Crouching Leopard ready to pounce

Apple has set the date: The next version of Mac OS X, known as Leopard, will go on sale Friday, October 26.

Most Mac enthusiasts already know the list of improvements and enhancements to this sixth major release of OSX as Apple has been turning up the promo heat for a few months. The redesigned 3D Dock actually looks like a little shelf or maybe a mantle with all your favourite icon objects sitting on it. Stacks is a new Dock object that provides a novel way of organizing and accessing files: click on a Stack and the files within fan out onto the desktop so you can quickly find and select the one you want. Quick Look lets you peek at the content of a file without having to launch the application that created it. Spaces is a desktop organizing feature that allows you to group items into panes – oops, spaces – and then organize and access each separately. This is not unlike the multiple desktops feature available on some versions of Linux. These are some of the more dazzling of the 300 new features Apple says it has built into Leopard. These run the gamut from new stationery for Mail to the inclusion of Boot Camp, which allows Mac users to run MS Windows on Intel-based Macs. Leopard will cost $129, but Apple also has a family pack for $199 that licences up to five Macs in the same residence. The software will be available at Apple Stores and authorized resellers.

Bigger frame for your digital photos

Photo accessory supplier Mustek (www.mustek.com) has introduced an eight-inch digital photo frame with built in memory card slots, onboard memory and speakers.

The PF-D852AM has a suggested retail price of approximately $180 and will be available beginning in November.

The display is a TFT LCD unit with a resolution of 800 x 600 pixels, and can be used either in landscape or portrait orientation. The unit includes 128 MB of memory, but also has media card slots to support most memory card types, and will display images directly from the memory card or from internal memory. It also has a pair of onboard speakers. It supports jpeg, mp3, Xvid and motion-jpeg file formats. When not showing images, the frame can be used as a clock and calendar as these functions are built in. For connectivity the frame includes USB 2.0, AV-out and headphone jacks. It also comes with a remote control unit.

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*Some restrictions apply. Please call for details.

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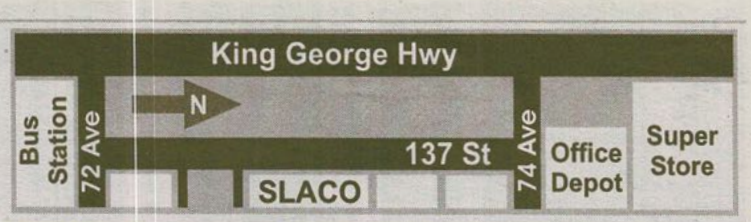

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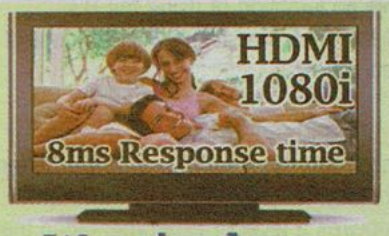

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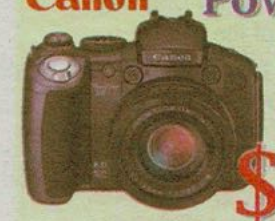

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Ultra-portable powerhouse

Don't let the size fool you: a powerful PC on a stick

The Ultimate PC isn't necessarily a liquid cooled, power hungry and high-spec machine tailor made for running high end graphics applications and games. The Ultimate PC is just about any PC that can boot from USB or, if you have a boot disc in hand, anything with an accessible USB port. The true Ultimate PC is the one that does everything that you need it to do. Ideally, wherever you need to do it.

In a different twist on the Building the Ultimate PC concept that HUB: The Computer Paper has explored previously, instead of grabbing top of the line components and putting together one PC to rule them all, we're going small. Thumb drive small.

Cramming your favourite (or at least default) operating system and your most commonly used applications onto a device no bigger than your thumb offers a level of geek satisfaction that's hard to beat. It also makes using a shared computer like an office, Internet café or library PC much more secure. Rather than writing your web browsing history, your Skype call log, your MSN Messenger username or any other personal information on the PC, the USB stick acts as a self-contained unit. It is the documents folder, the cache, the user preferences, history and in some cases, the optical drive in one.

Keeping all of your personal data in one place requires a level of extra care; USB keys are easy to lose if you're not extra careful. That said, assuming you manage to hold on to the thing, they also offer a level of personal security that no shared computer can. There are some issues to be – in some cases – suffered and – in others – solved, of course. Nothing that offers the level of convenience of having your own system in your pocket comes without cost. However, with a little tinkering and unfortunately in some cases, changing of your work processes, the convenience can outweigh the cost.

Choosing your OS

While the most usable and user-supported USB PCs are Linux based, there are also ways to shoehorn Windows XP onto a bootable USB drive. There are also limited Mac installations that run classic Mac OS but these are more for the sheer "gee whiz" factor; useful applications for Mac Classic in the current computing environment are limited. There is a wealth of abandonware for the OS available online however, much of which is offered up directly by Apple itself. How benevolent. We'll explore creating a bootable USB drive running Ubuntu, a bootable drive with Mac OS Classic and we'll steer clear of Windows as we're feeling lawsuit-phobic.

Choosing your Ultimate PC

With the price of NAND flash storage setting the consistently record lows that come with mass production and mass acceptance, the time is ripe for a reasonably large storage capacity PC in your pocket.

The type of USB thumb drive you choose to use should not be a big issue. A cheapie 1GB stick (available in an array of early iMac-like colours with an attractive $15 price tag) proved itself not quite up to snuff where access and transfer times are concerned. Considering this is going to be the main storage for what is intended as an "Ultimate PC," slow read/write speeds are patently unacceptable. Also, with a full install onto the stick, 1GB of storage, while it may be enough to act as a portable means of storage for important documents, limited pictures and office or classroom essentials, it's simply not enough for a really usable portable PC.

Unfortunately, as is often the case with not specifically sanctioned projects such as running an operating system from a USB drive. The only real method is trial and error and the only support comes from end users. PendriveLinux.com keeps a small list of USB drives that have met with success in acting as a bootable OS drive. For this project, we'll be using a Cruzer Contour as its sleek slide-out USB connector action is worthy of a cool application such as this. We're opting for the 4GB flavour which should provide plenty of room for general use though not for the housing of music, lots of pictures or video. It's considerably more than $15 however. The 4GB stick comes in at about $100.

It is here that we encounter our first issue. The SanDisk Contour offers U3 pre-bundled on the drive. It's launched from a read-only portion of the drive which has been set to act as a virtual CD/DVD ROM drive. Upon inserting the Contour into a Windows machine, the U3 application is autorun. It's useful if you're interested in a simple and hassle-free way to get and manage your portable applications—it acts like a second start menu on any Windows machine you plug it in to, allowing you to run your applications with your user data. However, it confuses things when trying to create a bootable Linux install so it has to go.

We have seen USB keys that autorun a promotional video or other such useless and potentially annoying applications upon insertion. Fortunately, the SanDisk Contour is not counted among them. On the SanDisk web site is a simple 3MB application that removes the U3 partition and the virtual CD ROM. It even offers to save out user stored data before the format. Who says you can't go home again? Where too often manufacturers seem to want to force consumers to use their technology the way they intended, this U3 removal tool is a welcome find. Too bad though that users who have no intention of using the U3 capabilities of the stick are still hit with the cost of its inclusion, albeit indirectly.

Portable PC or take-along Start menu?

While the practical applications of a portable PC on a USB stick are many, projects like this aren't for everyone. It requires a level of experimentation that some users can't or can't be bothered to approach. Experimentation not just in getting it to work in the first place but in finding the best way to continue to work with it. There's a lot of usability to found in U3 and other methods for getting portable applications and U3 is a good option for users looking for the simplest and arguably, most refined means for taking your apps with you. However, once the initial legwork is taken care of in creating a full OS install on your handy USB key, what you'll have is a portable PC of the most diminutive dimensions that offers access to your files, your passwords, your web sites, your cache, your cookies and the like.

By Andrew Moore-Crispin

Next issue: Breaking it down: rolling up our sleeves and creating a portable Ubuntu PC on a USB stick.

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The computer cop

Forensic IT: It's not all intuition and intrigue

The white hot field of IT forensics can lead to a relatively exciting career for a computer geek, but Special Constable Harold Shiffman warns that aspiring digital investigators had also best prepare themselves for a bit of paper pushing drudgery and evidence-related tribulations.

The term IT forensics conjures images of television shows like CSI in which beautiful people work in funkily lit labs using programs with quixotically simple user interfaces that make it seem as though almost anyone could pull data off of a burnt CD or figure out from which IP address a sex predator's emails originated.

In other words, it's not a particularly accurate representation of actual IT forensics work. Real digital investigations are far less glamourous and much more complex. They typically involve plenty of grunt work—like sitting around waiting for a crook to show up and conduct criminal activity through a known channel—and a deep understanding of the technology being examined. Unlike popular forensics television shows, there are no quick and easy applications to do all the work for you.

So says Special Constable Harold Shiffman, Manager of IT Investigations for University of Saskatchewan Campus Safety. The prairie-based peace officer recently spoke with HUB: The Computer Paper to explain his daily duties, describe some of his more interesting investigations and let us know how he became a computer cop.

The area of IT forensics is a hot one says Shiffman, who found his way into the profession by befriending an aging campus security officer who looked after the University of Saskatchewan's IT investigations. "I thought I could get into it after he retired," said Shiffman. Sure enough, he learned the ropes from the veteran campus cop, spent a couple of years getting a graduate degree in computer forensics investigations and eventually slipped into the role of head IT investigator at the university.

Shiffman acknowledges that he was fortunate to have such an easy time getting into the business. But he believes that many hopeful IT security investigators might not fully understand what the job entails.

"A lot of people are interested in IT security," said Shiffman, "but few of these people are interested in the policing

Special Constable Shiffman's five favourite freeware security tools

CPorts
(http://www.nirsoft.net/utils/cports.html)
This app is like Netstat on steroids. It's great for looking at active TCP/IP traffic and quickly identifying the process opening the connection, where it is going, and on which ports. It also has the ability to kill processes from within.

Hijackthis (http://www.spywareinfo.com/~merijn/programs.php#hijackthis)
Sometimes I'm too busy to make a house call for a user who thinks something might be wrong with their computer. This app allows them to run a scan and save the results to a text file that they can email to me for analysis. The scan will list all running applications, startup programs, unusual services et cetera, so I (or any security administrator) can view what's going on with a computer quickly and easily.

ProcessLibrary.com Process Scanner
(http://www.processlibrary.com/processscan/)
With the amount of proprietary software installed on most machines these days, it's important to have a way to verify that all of your startup applications are legitimate. ProcessLibrary does just that. The program's Process Scanner will run a scan of all your running processes and provide a report.

Abuse!
(http://spam-abuse.sourceforge.net/)
On occasion, I have to deal with spam complaints or open proxies. Abuse! automatically scans email headers, then provides an originating IP address and automatically sends abuse complaints.

StartupCPL
(http://www.mlin.net/StartupCPL.shtml)
StartupCPL (Startup Control Panel) is an easy way to analyse all of your Windows startup applications. It provides the ability to check applications you don't want starting up and identifies where they're located on your hard drive.

Honourable mention: Multi_AV This is a great virus scanner front-end, though it can be difficult to find (try a Google search). It draws from many different freely available scanning libraries—including Kaspersky, Trend Micro and Sophos—to clean infected systems.

aspect. They like to look at a hacked computer but they don't want to stand up in front of a judge and deliver a statement. I have to properly collect evidence and present it to court."

And when he's not in court or actively investigating crime, much of his work is standard bureaucracy. He's had to develop and orchestrate IT risk assessment policies, look after campus security's own IT security and train other officers in the handling of digital evidence so that it's presentable in a court of law.

Of course, there are also a few perks sure to appeal to computer geeks. He gets to carry out security experiments by setting up computers and purposely installing malignant software to see how it works. He also makes some of his machines defenceless to external attacks so that he can monitor the results. Plus, he gets to purchase and test various security-breaching devices to obtain hands-on knowledge of their capabilities. Case in point: He recently picked up a Snoop Stick, a USB key that secretly monitors and records activity on any computer it's plugged into. According to Shiffman's findings, the device is ideally suited to "surreptitiously monitoring what your kid or spouse is doing."

But the part of his job likely to be interesting to just about anyone—IT security savvy or not—is the investigation of actual crimes.

One of his more exciting cases involved a break and entry in a campus residence in which the offender used the victim's computer and accessed her email. To catch the perpetrator, who campus security suspected might be a repeat offender, Shiffman set up an elegant trap that involved a fake, unlocked dorm room decorated as though a woman lived there, a hidden camera, and a computer that Shiffman could remotely monitor, complete with dummy Hotmail account and folders full of phoney emails.

Other investigations don't require such elaborate snares. Shiffman remembers one case in which an inept criminal was downloading 300 pages worth of stolen credit card numbers using a pilfered student account in a campus computer lab. The printer jammed 20 pages into the print job and the crook panicked and left. When the jam was cleared the next day and the lab manager saw what was being printed out, he called Shiffman. "[The perpetrator] didn't even disable the keylogger, so we were able to identify him to a tee," said Shiffman.

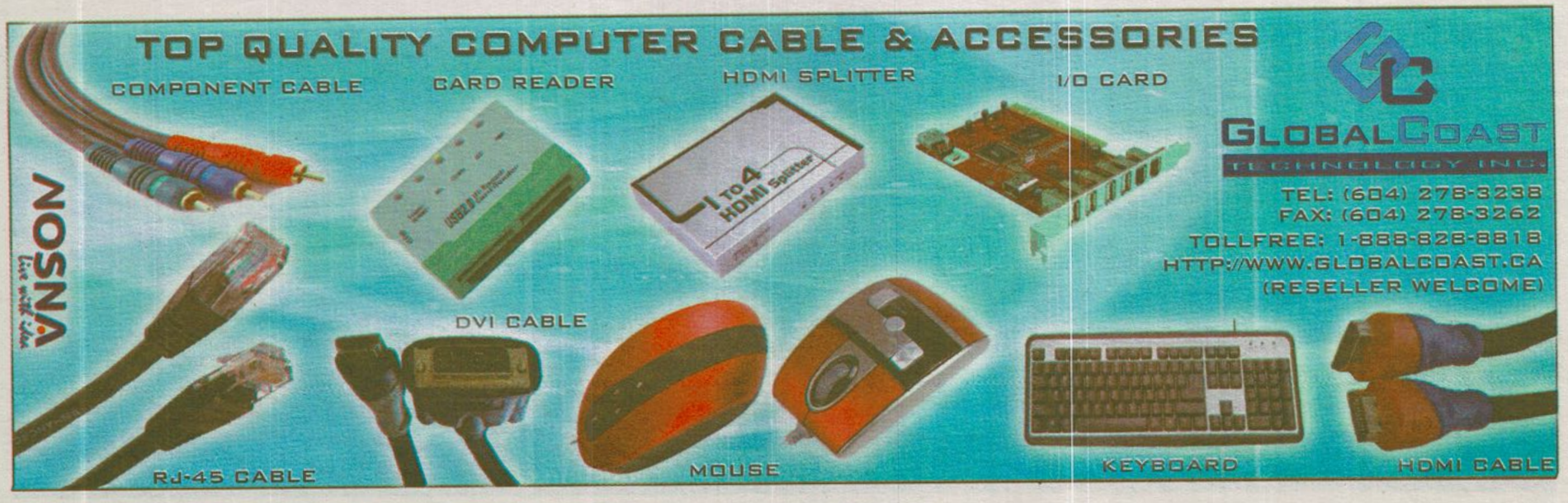
Another investigation involved a student who claimed that a professor was harassing her. She called campus security and complained that a threatening note had been slid under her door and that she had been receiving threatening email. It turned out that the student had sent the emails herself from a web mail account. "Some people assume that Hotmail is completely anonymous," said Shiffman. "It's not." Shiffman's investigation indicated that the mail originated from a computer in the student's building. "She claimed that she simply didn't log out of her account," said Shiffman, "but everything pointed to her being there [when the threatening emails were sent]." The case was eventually dropped.

But for every solved case there are many that discourage. "Unlike other crimes, where you might have fingerprints, I can't always say with 100 per cent certainty who was sitting at a computer [conducting criminal activity]," said Shiffman, who noted that he has had to end many investigations for lack of concrete evidence.

His hands have also been tied more than once due to the global nature of online crime. To illustrate this point, Shiffman described how he once discovered that an Italian hacker had been responsible for attacking university machines. "I have the evidence available," said Shiffman, "but the jurisdiction is confusing. Italian authorities [must be the ones to] prosecute."

Indeed, frequent impotence might be the most disheartening part of the job—and something worth keeping in mind if you happen to be a justice-seeking idealist considering a career in IT law enforcement. Said Shiffman, with a mixture of frustration and resignation, "In computer forensics, you can't always guarantee an arrest just because you found a crime."

By Chad Sapieha



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Free Internet Antivirus protection

Is it catching? What's the catch?

For reasons that are still puzzling, most SOHO entrepreneurs want to be protected against viruses, computer worms and Trojan horses programs and the likes but don't want to pay the price that the major security companies like Symantec and McAfee are asking for their product. Not that such a price is extravagant but, for them, the fact remains that while antivirus programs can be quite efficient, they still can't guarantee that you will be bulletproof. Antivirus programs will protect systems against known viruses and even some unknown viruses by using a heuristic algorithm that finds viruses based on common behavior.

But the most common method of virus detection used by antivirus programs remains keeping a regularly updated list of virus signatures that these programs use to identify and neutralize an incoming threat.

The disadvantage of this detection method is that users are only protected from viruses that pre-date their last virus definition update.

Symantec with its research and development facilities around the world and McAfee with its Avert Lab are both keeping an eye on the online world, ready to react and neutralize threats as they emerge.

But no matter how fast the experts work, it still takes time for them to neutralize a new threat and time is of essence when you consider the speed at which a threat can spread around the globe.

Just a reminder: In January 2003, the relatively benign "Slammer" (Sapphire) worm became the fastest spreading worm to date, infecting 75,000 computers in approximately ten minutes.

With that in mind, it's difficult understand why some SOHO entrepreneurs seem reluctant to spend money on specific, tailored security solutions.

Define "free"

There are dozens of free antivirus programs available on the Internet, but the question is, are they really free?

Many of these so called "free" programs are in fact bait aimed at up-selling users to more "sophisticated" program which, of course, is not free.

I was only able to find three truly free antivirus programs on the Internet. And by "truly free," I mean a program that you can download without being harassed about buying a more complete version.

The first one, and anecdotally speaking, the one with the biggest brand cachet in Canada, is AVG Antivirus Free Edition which enjoys a well deserved five-star rating on many credible download sites and has received critical acclaim.

By default, the application is set to search for new virus definitions daily but it also provides a tool for scanning your hard drive and email, as well as a real-time shield to prevent infections.

One of the great advantages of this program is that, unlike major other antivirus programs, it does not tax your system when scanning or running in the background. The interface is quite convivial and very simple to navigate.

Another popular free antivirus software is Avira's AntiVir Personal Edition Classic. This German company claims to have 30 million users around the world.

The program offers what Avira calls a basic protection covering viruses, worms, Trojans as well as expensive dialers and phishing attempts.

The third really free antivirus software is called Clam win, a simple Open source GPL virus scanner that offers a high detection rate for viruses and spyware, scanning scheduler and automatic download of regularly updated virus database.

It must be said that a free antivirus program called Norton Security Scan basics (Symantec) is also available as part of the Google package. The program offers deep scan analysis of your system, disks and registry, detection and deletion of viruses, worms and Trojans, detection of spyware and adware in your system, a simple interface, free and frequent virus definitions updates.

Is it free for me?

For SOHO users, the question of whether free or "free" antivirus protection is sufficient for their needs may be irrelevant. AVG Antivirus Free Edition, for example, clearly states that its software is free for non-commercial use. That is to say, if you're an independent business person, you're duty bound to purchase a commercial license for the software. While it's true that the antivirus software is 100 per cent functional in the free version (Anti-Virus Pro license holders also get 24/7 tech support, faster virus definitions downloads, multiple language support and the right to use the software in a commercial install), the free license only extends to individual users.

The upshot is that by paying a reasonable fee (US$29.95), commercial users whose computers are critical to conducting business make the software free to home users.

What about malware?

Viruses can affect your system and be destructive in more ways than one but they are not considered to be the greatest source of concern these days when you talk of computer protection. Malware for profit is. Malware also called Stealware are programs that have been written with a financial or profit motive in mind. They go by the names of spyware, adware, spyware Trojans, botnets, Keyloggers, hijackers, tracking threats and rogue anti-spyware to name a few.

And they have the same objective: getting inside your computer and stealing key bits of information including your passwords, personal files and bank accounts. This threat can literally take over your computer and extend into your personal life as a perfect tool for identity theft.

There is one free program that can help you fight this kind of threat. It's called Spybot –Search and Destroy.

The data bank of the program which is updated practically on a daily basis contains the signatures of all the known malware programs circulating over the Internet.

Unlike other anti-spyware programs, which can take a very long time to scan through each and every file that resides on a PC, Spybot is able to scan a PC in just a few minutes by focusing on specific places where unwanted spyware programs are most likely to infect the hard drive.

It works and it costs nothing. Can't argue with that.

By André Salwyn

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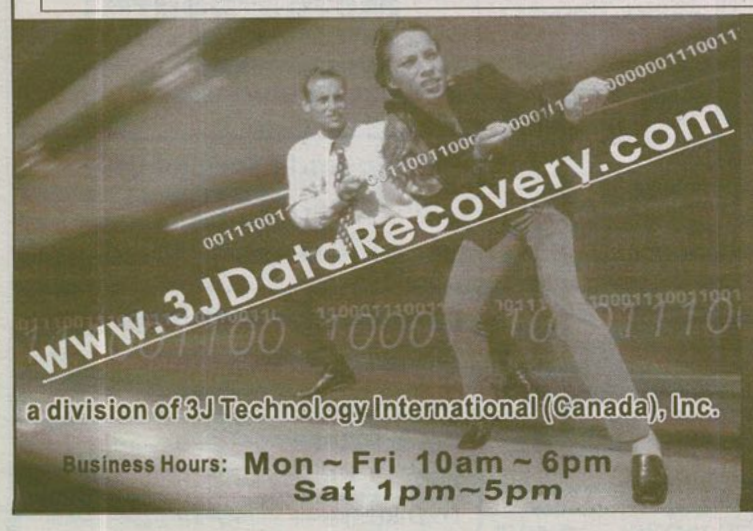

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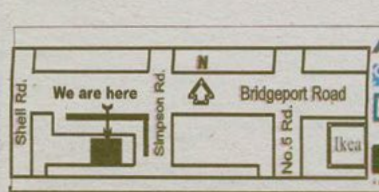

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Jack of one trade

Monochrome laser printers In The Lab

One sage piece of advice offered to budding entrepreneurs is to "do one thing and do it well." Rather than trying to be all things to everyone, see a gap in the market, an under-served segment or see how you can do something better than your competitors and create your business plan around that. Small and medium sized business and enterprise work groups may therefore appreciate the simplicity and performance offered by stand-alone monochrome laser printers.

These aren't the multi-function fax machine, copier, printer, scanner, coffee makers that grace the shelves of your local computer retailer or SOHO supplier. Rather, these are (varyingly) easy to set up, easy to administer and easy to use black and white document printing workhorses for smaller offices and workgroups.

Why go mono?

Inkjet and laser multi-function printers (MFPs) serve as true all-in-ones and in many cases, are an ideal choice for a home office. Inkjets offer often incredibly low initial cost of ownership but the value proposition falls apart if you need to do anything more than sporadic photocopying and if you receive more than a few faxes or print more than a few documents ("few" in this case being a scientific measurement stand-in for "not many but we're not entirely sure exactly how many").

Laser MFPs tend to be more expensive at retail but have a lower overall cost of ownership than their inkjet counterparts. That said though, in offices of more than a few (a literal few, in this case) people, an all-in-one document centre is likely to experience some traffic jams which rank only slightly below paper jams on the list of printing pet peeves. While Jane from accounting is trying to fax off year end figures, John in marketing is scanning documents and trying to print off a dozen copies of a presentation for tomorrow's meeting. Meanwhile, Milton is searching for his Swingline stapler and listening to the radio at a reasonable volume from nine to eleven while he's collating (Office Space, anyone?).

The monochrome lasers we had in for testing are stand-alone document printing centres. They would be ideally suited to a medium-sized office or workgroup that will use a central office fax machine and a central copier and document scanning centre.

A note on HUB: The Computer Paper's review methodology. Each printer was tested in as close to an even comparison as possible. Things like the way certain functions or features are labeled (econo mode, toner saver or eco mode are all different names given to essentially the same function, for example), but can be fairly compared and contrasted across the various manufacturers and models.

In the course of our testing, we used a 10-page black and white document without line breaks, indentations or any special formatting in both our single-sided and duplexed text printing tests. We also used a 13-page stock photo catalogue in PDF form with approximately 10 per cent image coverage to test monochrome image reproduction. There was no appreciable difference in print time per page as compared with our text-only document.

First page print time was tested from the moment the print button on our freshly formatted Windows XP Professional box was pressed to the moment the first page dropped in to the document tray.

Our measurements for a printer's noise level were highly scientific and involved walking away to a point that the sound of the printer was no longer annoying while the printer churned out pages.

Price: Manufacturer's suggested retail price where available. Retail partners may sell for less.

Dimensions: From widest point to widest point, including displays.

PPM (manufacturer supplied): The manufacturer's listed page per minute (PPM) based on a best case scenario.

PPM (real world, printer default settings): B&W print time/10pg = sec. per pg. and 60sec./sec. per pg.= PPM

PPM (real world, duplex): Same equation but measured while printing the same document in automatic duplex mode.

Duplex: Automatic and/or manual

Consumables cost: Manufacturer's suggested retail price (MSRP) for a high-yield if available (assuming direct order through consumables management feature of printer interface when present). Assumes use of cartridge return programs and the discounts associated therewith when available.

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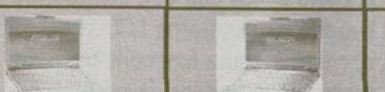

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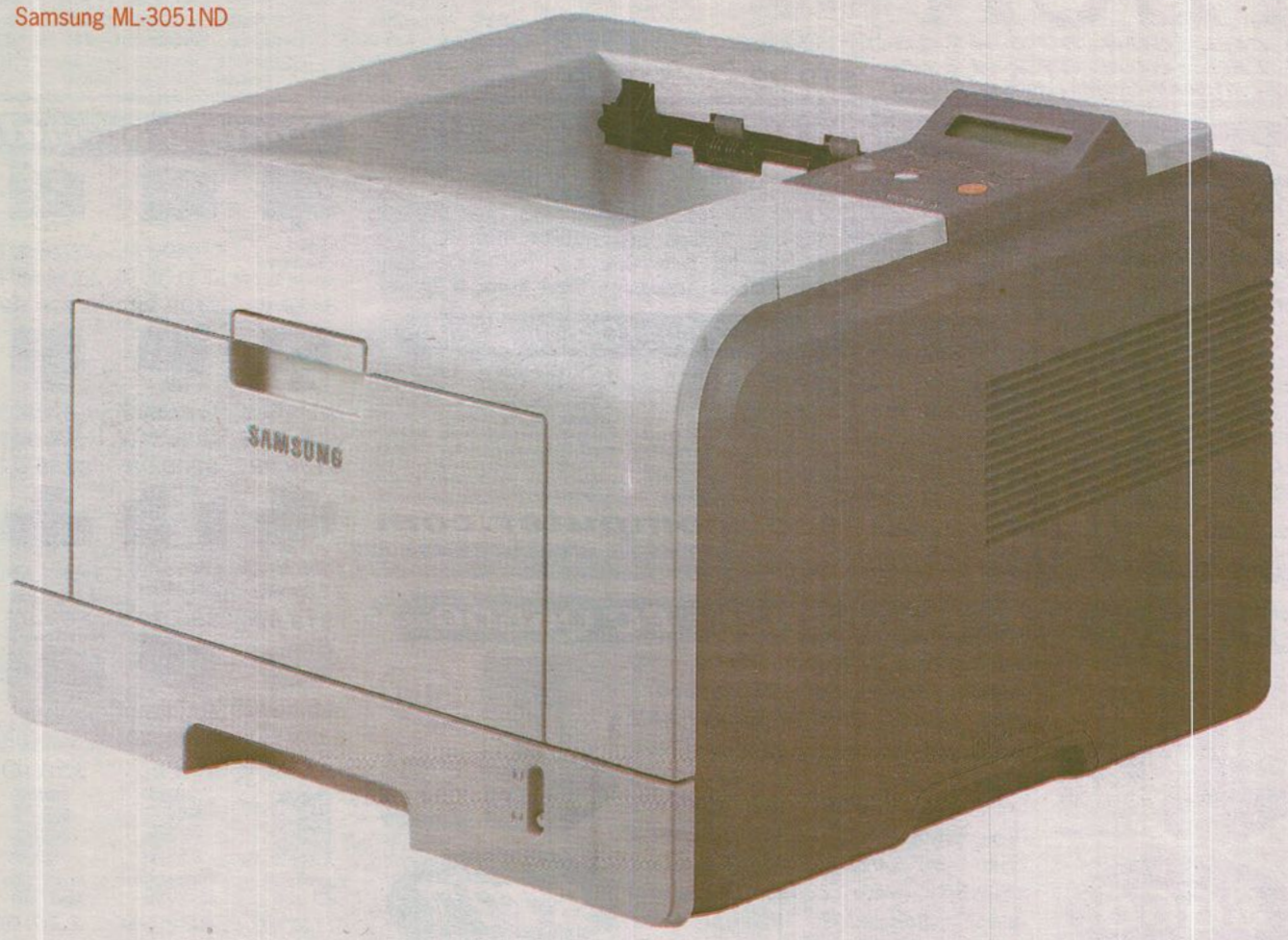
Samsung ML-3051ND



saving prints with no appreciable loss of print quality, making the Lexmark E352dn a truly usable printer–even for presentations or official documents–when in toner-saving draft mode. The same black and white document sent through in standard setting duplex mode, which is easily accessible via either the printer's two-line mono LCD screen or using the on-screen printer menus, offered a PPM of 14.6.

The printer spools quickly and would be a good choice for workgroups given its 35,000 page duty cycle, 366 MHz processor and 32MB RAM, expandable to 160MB. As a networked printer, it's ideal as a workgroup device. In this context, the noise level is acceptable. If it's going to be sitting on a desk however, a quiet mode scales the speed back and thus, cuts the noise level significantly. If the printer is sigging on your desk, it's worth the sacrifice.

A single sheet or envelope slot on the front of the unit is a nice touch for quick one-off envelopes or label sheets. When using paper from the bottom-mounted, 250-sheet capacity paper tray, it can be loaded with up to 11" x 14" (legal) paper. Beyond 8.5" x 11" however, the paper tray must be expanded such that it juts out of the back of the printer. This issue is not unique to the Lexmark printer in our round-up. However, the included dust cover that keeps the otherwise exposed paper (and thus, the printer's inner workings) clean, is.

E352dn

Lexmark www.lexmark.ca $508.75
Dimensions: 38.5 x 25.5 x 32cm (WxHxD)
Weight: 11.4kg
PPM (manufacturer supplied): Up to 35PPM (A4 paper)
PPM (real world, printer default settings): 24.9
PPM (real world, duplex): 14.6
Duty cycle: 35,000 pg/mo.
Duplex: Auto or manual
Network: Ethernet
Noise level: 10ft. in default, beside your desk in Quiet Mode
Consumables cost: Toner cartridge- $214.65 / 9,000 pg., Photoconductor Kit- $45.90 / 30,000 pg.

The E352dn from Lexmark is a good looking and versatile mono laser printer offering network functionality and full manual or automated duplexing, along with options for booklet, top-bound or side-bound duplexed printouts. It's a capable printer and despite some initial driver installation issues, is the fastest of the bunch with a real world PPM of 24.9. Well short of the manufacturer's spec of 35 PPM but also, including the initial spooling process. After hitting the print button, the first finished page landed in the tray in about 8 sec. Dialing down the print quality to draft doesn't have that much effect on the printer's speed but does offer toner-

ML-3051ND

Samsung www.samsung.ca $299.99
Dimensions: 39.5 x 28 x 41cm (WxHxD)
Weight: 11.1kg
PPM (manufacturer supplied): Up to 28 (A4 paper)
PPM (real world, printer default settings): 21.7
PPM (real world, duplex): 15.1
Duty cycle: 50,000 pg/mo.
Duplex: Auto or manual
Network: Ethernet
Noise level: 8ft.
Consumables cost: Toner/drum cartridge- $129.97 / 8,000 pg.

Samsung's ML-3051ND is a speedy printer that offers high quality output in default mode. It's also one of only two printers in our Lab that incorporates a two-line monochrome LCD panel for accessing some functions from the printer itself and for giving text feedback on the printer's status and, should any problems occur, what's ailing it.

While it's rated for a 50,000 duty cycle, the ML-3051ND is probably best suited to a smaller workgroup or for individual, heavy use home office as it's paper tray feels a bit flimsy and will

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require extra care to ensure it isn't damaged.

Duplexing and toner save modes are accessible via dedicated buttons on the printer's no-nonsense control panel. Toner save mode creates a readable document suitable for internal office use and filing but that you probably wouldn't want to hand to a client with text looking a bit washed out without sufficient contrast on the page. In default mode however, the ML-3051ND spits out high contrast, easy to read pages and clear monochrome images and charts with the first page hitting the tray in about 10 seconds.

When auto duplexing, the capable printer still manages a respectable PPM of 15.1 with our 10-page heavy coverage text document taking 39.7 sec. from spooling to finished tray.

The paper tray can accept media up to 8.5" x 14" (legal paper) by expanding the tray, which then juts out a bit precariously from the back of the unit. A second tray can be added to boost the printer's capacity from 300 to 550 pages in the lower tray, the same number in the add-on tray and 50 pages in the front-loading multi-purpose tray. Said tray accepts plain paper, envelopes, labels and other media.

Under the hood, a 400 MHz processor and 64MB RAM expandable to 320MB keeps this chugging along smoothly and allows for a large print queue.

For administrators, the ML-3050 series includes the "SyncThru Web Service" for checking the status of the printer on the network, including network and individual settings and updating firmware. The "SyncThru Web Admin Service" that is available on network versions of Samsung printers ups the ante allowing remote diagnostics, configurable problem alerts and more through a dedicated web interface.

HL-5250DN
Brother www.brother.ca $299.99
Dimensions: 36 x 23 x 37.5cm (WxHxD)
Weight: 9.8kg
PPM (manufacturer supplied): 30
PPM (real world, printer default settings): 21.7
PPM (real world, duplex): 11.4
Duty cycle: 20,000 pg/mo.
Duplex: Auto or manual
Network: Ethernet
Noise level: 10 ft. from desk
Consumables cost: Toner cartridge- $129.99 / 7,000 pg., Imaging drum- $249.99 / 25,000 pg.

Brother's HL-5250DN is a no-nonsense networked laser that, despite its lower than the average duty cycle of 20,000 pages per month, is a capable, high-capacity and speedy printer suitable for home office use or in smaller workgroups.

Brother HL-5250DN

Perhaps its biggest claim to fame is in its huge up to 800 sheet capacity; 50 sheets in the front-loading, flip-down multipurpose tray, 250 in the included paper tray and up to 500 more with two additional purchase add-on paper trays. You'll have to keep an eye on larger jobs however as the output tray will only accept 150 of those printed pages.

Paper trays accept up to legal (8.5" x 14") paper easily with snap tray adjustments. When using standard letter-sized (8.5" x 11") paper, the tray and the printer are one self-contained unit. When going beyond letter, the paper tray sticks out the back of the printer.

An incredibly easy to follow set-up guide makes it simple to get the printer up and running within half an hour of opening the box, even for neophytes. This ultra-simple setup speaks to single-user, non-techie offices. For small workgroups in enterprise, small offices and for the more technically inclined home user, there's an extensive web management system designed with network administrators in mind. Here, you can do web-based driver deployment to a workgroup, check the level of consumables, the printer's overall health as well as grab generic PCL drivers for Citrix Metaframe and *Windows Terminal Server.*

On the first run through, printing several 10-page documents, the printer left an awkward curve the finished product that made it hard to even up

the pages. However, after a few run-throughs, this problem self-rectified and didn't occur again.

Our 10-page heavy coverage test document made its way through the printer from initial spool to final page in 27.1 sec for an impressive real-world PPM of 21.7. The first sheet was delivered within 9.7 sec.

Duplexing on the HL-5250, while not the slowest, showed the biggest difference between print time for single-sheet and duplexed pages. Our 10-page test document printed on both sides of five sheets took a manageable 52.5 sec (11.4 PPM) from start to finish.

Under the hood, a 266 MHz and 32MB RAM expandable up to an impressive 544MB keeps things running smoothly.

LaserJet P2015d
HP www.hp.ca $449.00
Dimensions: 35 x 25 x 35.5cm (WxHxD)
Weight: 11kg
PPM (manufacturer supplied): 27
PPM (real world, printer default settings): 20.9
PPM (real world, duplex): 11.9
Duty cycle: 15,000 pg/mo.
Duplex: Auto or manual
Network: Not as tested
Noise level: 8 ft.
Consumables cost: HP LaserJet Q7553X Black Print Cartridge- $147.99 / 7,000 pg.

The P2015d is a recent entry level small office / enterprise workgroup mono laser printer and enjoys instant brand recognition as a part of HP's generally highly regarded LaserJet line. Eschewing a display screen, the P2015d instead opts for several LED lights that alert to paper jams, low consumables and other such printer mainstays.

Moving up a step from the P2015d, the P2015dn adds network capability, network administration and a print server to the list of marketing bullet points and adds about $120 to the suggested retail price.

The model tested is the basic P2015 with added duplexing functionality. Speaking of which, the LaserJet P2015d spits out duplexed pages (using our heavy coverage text document) at about 11.9 PPM. Single sheets emerged at a speedy 20.9 PPM in standard mode. In this mode, text is crisp, clear and easy to read. In our test presentation document, images are as clear as can be hoped for on a monochrome laser printer at factory default settings. Printing in economy mode, text becomes grey, loses contrast and generally makes it look as if the toner cartridge is dying before its time. In other words, eco-minded or not, you probably wouldn't want to put a document printed in this mode in front of a client, either existing or potential. Toner savings aside, the time savings aren't worth the sacrifice; our test document printed in eco-mode came out just a little more than three seconds faster (23.7 PPM) than the same document printed in standard mode. We assume that the toner savings in eco-mode are considerable.

The smaller than average monthly duty cycle of 15,000 pages per month mean this printer is ideally suited to home offices, some small offices and small workgroups. 15,000 pages is a lot to print in a month, but larger workgroups or offices should step up to a higher rated printer.

That said, the printer's solid feel speaks to reliability and it has what feels like the sturdiest paper tray in the Lab this month. Said tray accepts up to standard letter (8.5" x 11") paper while maintaining the printer's overall footprint. Upping the paper size to legal means the tray juts out the back. With an optional additional 250-sheet paper tray, the P2015d can accept up to 550 sheets; 250 in the included paper tray, 250 in the add-on and 50 in the multi-purpose tray.

A 400 MHz processor is the brains behind the operation and the 32MB RAM that comes standard can be expanded up to 288MB.

By Andrew Moore-Crispin

LaserJet P2015d

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The flip side of online media and file storage

The mantra "location, location, location" echoes with significance for real estate agents and digital media aficionados – the geographical significance of where online media is stored, sent or viewed can have serious implications far beyond house and home.

The ubiquity of personal media creation tools and the explosion of user generated content have been touted as the great democratizers of our media-saturated age. Today, almost anyone can create, share and enjoy online content with anyone else on the planet.

What's being called "user generated content" is just about the hottest thing in entertainment, in sports, even in journalism and broadcast news. It's the kind of stuff that comes from cell phones and digital cameras, and it's the kind of stuff that quickly builds into a major challenge as far as data storage capacity is concerned.

Online storage of any individual's personal media content is a new and burgeoning service niche, as consumers, businesses and organizations of all shapes and sizes look at alternatives to buying larger and larger hard drives.

So new service providers offer a small plot in their huge storage farm; sometimes for no charge, but usually for a monthly fee, depending on size. Multiple gigabytes to virtually unlimited storage packages are available.

Reliable file back-up and data protection service for all those precious photos and other digital media types is touted as a main advantage – if your home or office PC crashes, your personal media is safe and secure. Ease of access and fast media sharing via any web browser is another advantage – you can see your pix and play your tunes wherever you can find an internet-connected PC. So can anyone else you choose to invite. Several providers offer related media services, such as photo printing and photo album creation, online video editing or DVD creation, as well as various delivery options from streaming to emailing to downloading to invitation-only access.

Canadian digital media creators and photo archivists are familiar with such online photo resources, as one of the best and most popular – Flickr – was started here. It's now a part of a major international media conglomerate, having been acquired some time ago.

These mergers and acquisitions, while a common feature of the digital media industry, can pose problems for the end user. One is technical; the other, legal.

Already, people trying to "migrate" their media collections from one soon-to-be-defunct site to another are finding they can lose associated metadata, embedded hyperlinks or other valuable file information in the transfer.

Luckily, there are software solutions for file compatibility. But the legal issues are not as easily addressed, it seems. Especially for Canadians.

Here's a representative case: Corel, the well-known Canadian software company, upped its digital media footprint last year with the acquisition of two major digital media entities, InterVideo and Ulead, developers of video editing and DVD creation tools.

One result is the recent release of Corel's MediaOne, a powerful digital photo and video manipulation program that includes easy-to-use tools for automatic online backup and sharing, photo retouching and video editing.

Corel subsequently announced a multi-platform license arrangement with Sharpcast, a California-based technology company, to include solutions for the automatic synchronizing of images on a PC hard drive into a private and secure online vault. Users can access the imagery from any Web browser and even from select mobile phones. The Sharpcast-powered backup, sharing and online gallery features are accessed directly within the Corel MediaOne application with pricing for additional services varying from $5.99 to $22.99/mo.

In response to another query, the following reply was provided: "Sharpcast hosts all data in the U.S. and complies with U.S. privacy laws. Sharpcast does not transfer any personal information out of the U.S." Therein lies the rub. To serve a Canadian account holder, it would appear to be a necessity to transfer some personal data out of the U.S. (a password, if nothing else).

In any case, U.S. privacy laws are somewhat different than ours (and from those of other countries around the world). Likewise, data storage and content protection fall under different legislation depending on the country. Which laws hold sway if a customer is in one country, the digital media in another, and an end user who wants to see it is in yet another country? Location, location, location...

Of course, it's not just Corel. Take a look at the fine print concerning media stored and shared on Facebook: "...Therefore, we cannot and do not guarantee that User Content you post on the Site will not be viewed by unauthorized persons. We are not responsible for circumvention of any privacy settings or security measures contained on the Site. You understand and acknowledge that, even after removal, copies of User Content may remain viewable in cached and archived pages or if other Users have copied or stored your User Content.

By using Facebook, you are consenting to have your personal data transferred to and processed in the United States."

Bell Canada, too, has jumped on the online storage provision train offering a service it calls Your Personal Vault. Depending on the service level selected, 5GB of space (enough for approximately 1,000 songs, six full-length movies or over 5,000 of your favourite photos, the company says) is available for around $6.00 a month. Data, Bell says, is encrypted on its way into the vault, which actually is a part of one of Bell's Canadian Data Centres (with data protection redundancy at mirror sites).

Sounds good, and it seems as if the location issue is being at least partly addressed. However, as Bell itself says, "...[N]o password-protected system of data storage, retrieval and sharing can be made entirely impenetrable... As the Service utilizes the public Internet and third party networks to transmit data and files, Bell does not guarantee the security of any Content or other information transmitted or shared to or from the Service or Your Account."

So it turns out that, while almost anyone can create, share and enjoy online content with almost anyone else on the planet, you may not always know who they are.

By Lee Rickwood

Really, honesty, truly delete forever?

Yes | No | Ummm...

A paper shredder is standard home office equipment. In the all-too-real days of identity theft, credit card fraud and various other supposedly white collar crimes, it certainly should be.

Data shredders do not seem to be as common in the home or home office, despite the fact that your PC says more about you and offers up potentially more juicy details for would-be identity thieves. They should be.

When you delete a file (whether choosing the "permanently delete" option or by moving it to the recycle bin or trash and then emptying it out), the data isn't really gone. Rather, references to the file have been removed from the file system. The data itself is only actually deleted when the portion of the drive where it resides is overwritten with new data. Even then, recovery is still possible for would be data thieves, though it becomes more complicated.

File or data shredders remove references to files as with deleting within the operating system. However, they also overwrite the place where the file resided several times to ensure that it's really, honestly and truly deleted and effectively unrecoverable to anyone but the most devout computer forensics buff with a million dollar electron microscope... and even then....

Most people can think of plenty of data they'd rather no one else get a look at. Personal letters or tortured diary entries, emails, web browsing history and others (use your imagination).

When selling or donating a used computer, the temptation may be to format the drive and send the offending machine to Value Village or a worthy cause looking to find it a good home (see sidebar). However, even after a drive is formatted, the data it contained is still recoverable. Heck, even if you've thrown your laptop 10 feet in the air, poured coffee over it, stomped on and otherwise abused it, your personal data can still be recovered (which is as much fun as it sounds; see Jennifer Kavur's story Professional data recovery in the PC ER in this issue). The point is, you have to do much better than a simple format if you're going to destroy as opposed to hide personal data.

Often times when a reputable charitable organization like Little Geeks (www.littlegeeks.org) or reBOOT Canada (www.rebootcanada.ca) accept your used computer with plans to refurbish it and pass it along to a family who'll make good use of it, the organization itself will do a full system wipe and shred. Even so, destroying your own data and knowing that it's really gone does wonders for your peace of mind.

There are several options for data shredding, some more literal than others.

Literal data shredding

Hard Drive Destroyer is US company that specializes in the literal destruction of storage media including hard drives, backup tapes and optical disks. The company takes a much more literal approach to data shredding (certified by the National Association of Information Destruction (NAID)), ripping your drive to pieces, recycling that which can be reused and safely disposing of the rest. Once the deed is done, you get a certificate to file away as proof that the job was done.

There are also physical shredders that are designed to destroy optical disks. For a more potentially carcinogenic but altogether more entertaining approach, microwave CDs and DVDs on high for ten seconds. Actually, don't. Instead, google "Microwave CD" (and let some other idiot ruin his or her microwave and breathe in the noxious fumes. Not speaking from experience here or anything.).

A word to the wise; shredding files on a network disk or server is generally a bad idea; it can lead to erratic and unexpected behaviour in the drive and the computers connected to it. We didn't try to verify this first-hand; our resident IT guy can be pretty intimidating, you see.

Eraser

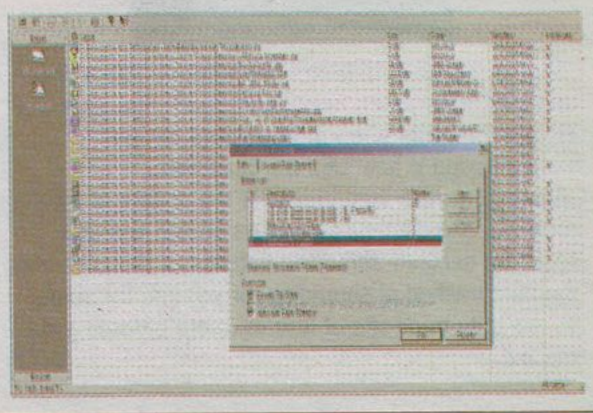
Build: 5.84
www.heidi.ie/eraser/
Price: GNU General Public License
Number of passes: 1 - 65535
Platforms: Windows

Eraser is a powerful and easily integrated, General Public License file shredder. A real triple threat. It's among the largest of the downloads at around 8MB.

Where Eraser really differentiates itself is in its level of user customizability; spending half an hour digging around in the preferences menu and help files will give users a good idea of what's involved in virtually shredding files, the trade-offs involved when choosing between faster or more secure shredding.

Where the majority of shredding utilities require users to decide exactly what gets deleted when, requiring a lot of thinking when trying to securely and permanently delete temporary files, cookies, cache and the like, Eraser includes a scheduling option. Here, users can opt to securely clean out older, non-shredded deleted files by taking a few passes over all the unassigned disk space on a PC. For example, you can set the software to securely wipe data remnants from the unused space of your office PC's main drive every Friday after work hours and then shut the computer down once finished.

For more user-driven deletions of individual files, Eraser integrates itself into Windows context menus. Right clicking a file presents an option to Erase, complete with an options tab to choose the method and number of passes. An interesting option is "Secure Move," also in the context menu. While much less intuitive than the drag-and-drop method of moving file in Windows, it effectively copies the file from one directory to another, securely deleting the original when it's done. The software also offers command prompt functionality and a simple boot disk utility for wiping a drive completely clean after a format; perfect if you're selling your computer but keeping your operating system license.

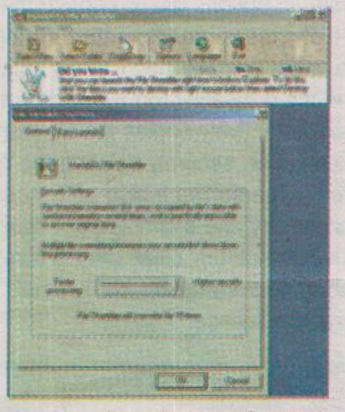


HandyBits File Shredder

Build: 5.5.0.74
www.handybits.com/shredder.htm
Price: Free for personal use, US$98 - US$398 (5 - unlimited users)
Number of passes: 2 - 15
Platforms: Windows

HandyBits File Shredder is an incredibly simple means of securely deleting files. It doesn't require or ask that you understand the logic that lies beneath, only that you understand the importance of permanently deleting personal files, never to be seen again... by you or anyone else, so be a bit careful.

Users have several options as to how they interact with File Shredder. The simplest and most familiar would be to place the File Shredder icon on the desktop beside the recycle bin and then choose how to deal with each file or groups of files individually. Said icon even looks like an office garbage can; a good visual cue. With dragging files to the recycling bin being engrained behaviour for many Windows users, it's a good solution if you're installing a data shredder for a less computer savvy user in your family. The software also integrates into Explorer menus, presenting context menu access to secure file deletion.



Another option is to launch the software into a drag-and-drop menu which functions in much the same way but that presents a few more options for user customization in how files are dealt with.

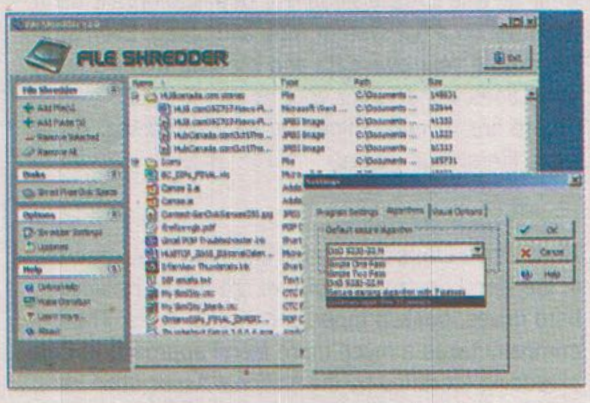
A poorly worded tips window at the bottom of the main File Shredder window offers limited tips and tricks for securely shredding batches of files, choosing the best method of shredding for you (i.e. the speed vs. security trade-offs of less vs. more passes) and the like.

File Shredder

Build: 1.20
www.fileshredder.org
Price: GNU license, donation
Number of passes: 1 - 35
Platforms: Windows

A simple and pleasant to look at piece of software, File Shredder's bare bones utility is reflected in its similarly bare bones and derivative product name. The major issue here is with the lack of any kind of user support; on the software's main page, the software's author states that no support is offered and there is no active user support community to draw from either. This may not be an issue but even on our simple office PC, many of the functions appeared not to work. Clicking a link in the File Shredder's main window for online help, learning more about file shredding and File Shredder resulted in nothing. Even the donation link was non-functional, which seems weird. You'd think a begware developer would put the donation link high on his or her bug fixing to-do list. In a similar vein, Explorer shell integration is an option in the software's menu but doesn't actually seem to engage shell functionality.

As a simple drag-and-drop or batch file shredder, File Shredder works and has the benefit of effectively



queuing your files for shredding. This allows you to review before hitting the shred button and also allows for batch deletion of queued files while you go for lunch or take a coffee break.

That said, with the issues and the lack of support or a support community and given the excellent GNU options available, it's probably best to give this one a miss.

Shredit

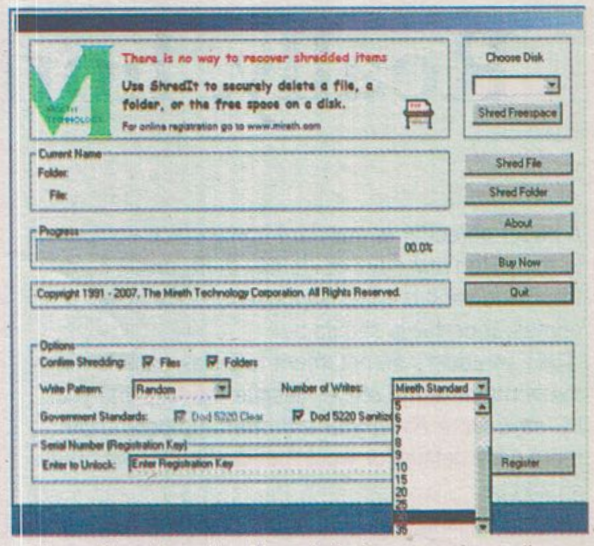
Build: 5.1.1.1
www.mireth.com/shredit.html
Price: $19.95 (download)
$29.95 (CD-ROM)
Number of passes: 1 - 35
Platforms: Windows,
Mac OS7 - Mac OSX

The elder statesman of the bunch, Shredit has been at it since the days of OS7 on the Macintosh. Perhaps that's why, despite the up-to-date shredding standards that lie beneath, the interface looks so decidedly old-skool.

A free trial option of the software is available on the company's web site and gives access to the majority of Shredit functions. Upgrading to the full version costs $19.99 or $29.99 for a CD-ROM copy.

While users can pretty easily shred the entire contents of an entire directory or drive, there is no option to shred an entire bootable drive. The company offers a tutorial on shredding a drive's contents completely but it is a work-around solution that involves formating, re-installing Windows and Shredit and then shredding the unused portion of the disk. With paid software, the expectations should be a bit higher. For example, a utility to create a bootable disk to erase an entire hard drive without re-installing Windows is sorely missed. Likewise, the fact that Shredit doesn't offer any kind of Explorer integration or a drag-and-drop interface seems a huge oversight, especially given the competition from no cost versions. Instead, users have to navigate to files and folders they wish to shred using the Shredit interface.

In the Mac version, there's even a utility to shred the data on rewritable optical disks. In any version of the software, users have the option to create a never-shredded folder for files that they'll never want deleted beyond recovery; family pictures, personal (hopefully non-incriminating) writings, music files and so on.



Where Shredit really shines is in its extensive online help and tutorial files that guide users through all manner of shredding tasks and its support service. When it comes right down, that's what you're really paying for.

12Ghosts Shredder

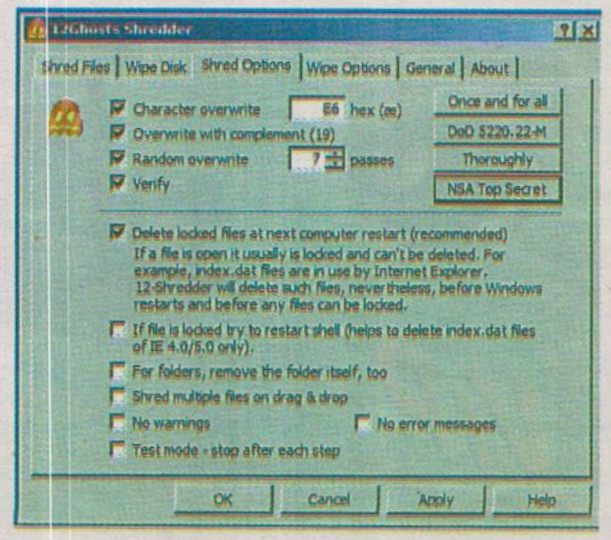
Build: 8.0.10.1
www.12ghosts.com/ghosts/shredder.htm
Price: $29.99
Number of passes: 1 - 99
Platforms: Windows

12Ghosts Shredder is a no-nonsense file deletion utility. It's powerful and offers more than enough depth for those who want to roll up their sleeves and get into the options. The software almost seems as if its been written with the criminal mind at heart. Not really, but it takes into account things that the general user wouldn't need or want to worry about; things like changing the date of files that it deletes, along with making the filename xxxxxxx.ext. It does this because even though these files are wiped entirely clean–with any reputable file shredder, it must be noted–the fact that a file once existed can sometimes still be apparent. It also takes extra steps like deleting locked files (those that are in use, for example, internet cache files) and then wiping them on the next restart, before they are accessed (and therefore, locked) again.

For all of its attention to detail, you might wonder why, exactly, things like integration into Explorer as a context menu are overlooked.

Dragging a file on to the desktop icon will delete files or groups of files.

By Andrew Moore-Crispin



The password is...

Simple and secure password management

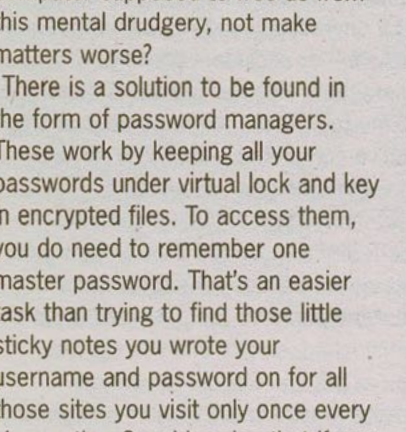
Passwords used to be mainly a novelty youngsters played with – asking for the secret word to allow admission to special clubs or access to hidden secrets – but today they play a central role in secure computing. Virtually every online community you frequent or service you use requires a password, and therein lies a problem: How to remember them all. Isn't the computer supposed to free us from this mental drudgery, not make matters worse?

There is a solution to be found in the form of password managers. These work by keeping all your passwords under virtual lock and key in encrypted files. To access them, you do need to remember one master password. That's an easier task than trying to find those little sticky notes you wrote your username and password on for all those sites you visit only once every six months. Consider also that if you can find them (no matter how long the searching) then someone else probably could too.

Many free and modestly priced password managers are available, but I'll use RoboForm (www.roboform.com) as the basis for this article as it's the product I've been using for the past couple of years. The general features, if not the specific implementations, are available from other vendors too. There are a few reasons why I like RoboForm: it's inexpensive (free, even), powerful and portable.

RoboForm Pro sells for US$29.95, but you can download the free version which differs mainly by imposing limits on the number of items such as passkeys you can implement, but if your needs are modest, the free version is sufficient.

Roboform is also quite powerful because it is actually a suite of applications. These typically reside on your main computer, but there is a portable version called RoboForm2Go that you can install on any USB memory stick (a second version of RoboForm2Go is available for U3 USB drives). There are also versions for Palm and Mobile Windows PDAs as well as the Symbian operating system used on some smartphones. Having your passwords scattered across diverse devices sounds like a recipe for a whole new set of problems. However, Roboform also includes a synchronization utility so that



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Try remembering these...

The best password is one that's hard to guess. Your phone number is a bad choice, as is your first name, your child's first name, your spouse's name or your dog's name. Your favourite sports team is also out. And take a hint from cult classic film Hackers; "love, secret, sex and God" are also terrible choices. "sdrowssap" is likewise an ill-advised choice.

The issue with having a password that's hard to guess is that it is likely to be hard to remember too. Passwords should be at least six characters in length, preferably longer. Passwords should be a c0mb1n@t!0n of characters, punctuation and letters. However, they shouldn't be a common grouping of characters like p@ssw0rd (or, perhaps, c0mb1n@t!0n). The strongest passwords are ones that are entirely random. Short of social engineering (i.e. phishing scams, looking for post-it notes containing password info or just plain tricking someone into giving away a password), the way to crack a password is through brute force; a series of potential passwords choices sent at an account where the user name is known in the hopes of getting a hit.

One option for selecting a password that presents a tough nut to crack for password crackers is to use a trustworthy secure, pseudo-random password generation site like www.grc.com/passwords.htm. A quick visit to this site will offer up a new pseudo-random set of three passwords; one 64 character hexidecimal string (for use with wireless routers, for example), one 63 character ASCII (for general password use) and one 63 character alpha-numeric. You can then choose all or a portion of the generated strings to create a strong, safe and secure password. This is really where password managers like RoboForm shine; generated passwords are, by their very nature, difficult to remember.

Just whatever you do, don't write your new, secure password down on a sticky note and tack it to your monitor.

you can maintain the same data on the different devices.

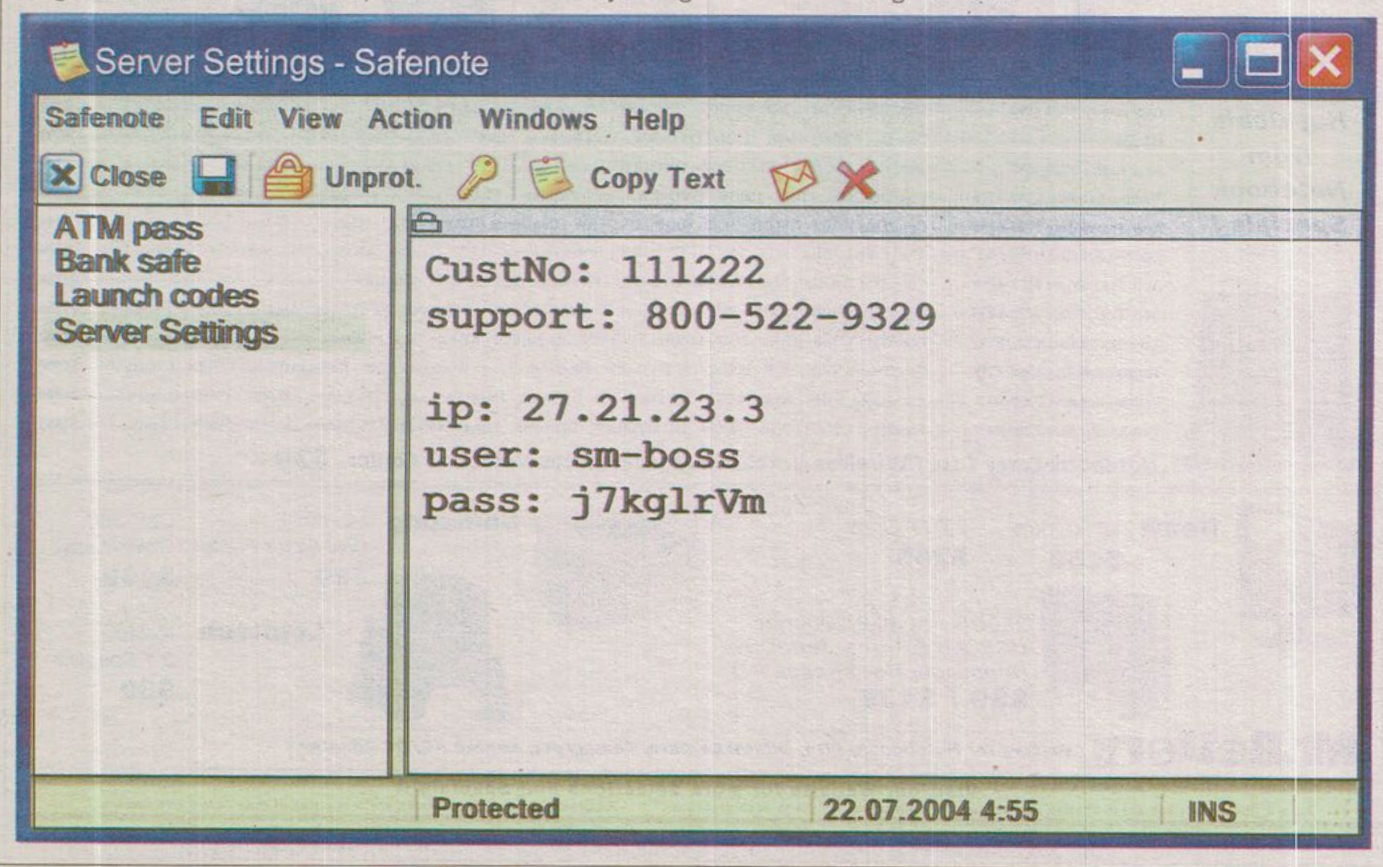
Once you've installed RoboForm, you can access it from the Start menu but it also installs as a toolbar in your web browser. It works with the recent versions of Internet Explorer, Firefox, Netscape and a few others. When you go to a site that requires a password and logon, RoboForm asks if you want to save them as a Passcard. Respond in the affirmative, and you're done. The next time you go to that site RoboForm will autofill those fields – or even more simply, you can automate the process through RoboForm. For example, with a single click on one of a rewards points passcard that I've recorded into RoboForm, the autofill routine launches the web browser and navigates to the login page, fills in the username and password fields and executes the login command.

Many web browsers offer to save that logon information for you, but there may be reasons why you wouldn't want to use this option – for example, if other people have access to your computer, they would just as easily be able to easily log into those sites. As well, if you use public access terminals at the library or coffee bars, you definitely don't want those computers to remember your login information. Using public access is where the portability aspect of RoboForm comes into play. When you plug in the USB key and type your master password into the RoboForm2Go start screen, you have secure access to all your passcards. The automated one-click login offers another benefit by protecting you from keystroke loggers – the little applets that record keystrokes, which thieves can subsequently access to find out exactly what you typed. Since you haven't typed your login information, there's noting to log. And when you remove the USB device, nothing of RoboForm2Go remains on the host computer.

Another feature I find useful are SafeNotes, which are secure text files that can hold other kinds of important information you don't want to forget and that needs to be kept safe. For example, when I buy software online, I save the registration key in a SafeNote – not only for security, but for convenience because once you get in the habit of storing important stuff there, that's the first place you look for it.

There are a few other features in RoboForm. A password generator will create a randomized string up up to 512 characters, and you can choose to include – or exclude – specific characters. Another feature is the online forms tool, which will remember a form you've completed and fill it in for you the next time you encounter it.

The convenience (versus security) of the RoboForm hinges a lot on how you set up the master password. Once you've typed it in, the passcard system is unlocked, so you can use the files you've put into RoboForm without having to type in the master password each time. But that also means if you step away from your computer with RoboForm unlocked, anyone else can use your passcards too. The system automatically logs itself off after a specific period of time and you can adjust that period to suit your work pattern. A selection on the toolbar allows you to also manually log off at any time. And once you are logged off, you need to once again type in the master password to access those secure passcards.



Conclusions

RoboForm is one of those programs you set and forget. It works very well. I use it to store not only login information but other snippets of information that I need to recall once in a while. The program gives you the option to protect new files or not, and in the latter case you can access them without giving the master password.

That master password can still be problematic, because you are advised to use one long enough and random to make it difficult to crack, which also makes it hard to remember. If you forget the master password, there's no way to recover the protected data. Maybe some future version will be tied to a biometric device like a fingerprint reader. Few of us forget where we placed our fingers.

By David Tanaka

DV Or Not DV

Next generation DVD: Greater resolution, fuzzier outlook

Recent developments in digital video promise the higher picture quality and greater image resolution of high definition (HDTV) from a regular DVD. For hobbyist videophiles and professional videographers alike, this is exciting news. More and more of us are using high definition video camcorders, and we're hoping to fill up more and more home theatre HDTV LCD or plasma widescreens with the best looking imagery possible.

Up to this point, it has been a challenge to get our own HD content in front of an audience – be it friends, family or otherwise. The increased picture quality of HD equals increased data requirements that existing technology seemed unable to meet.

Clever videographers could utilize computer hard drives, or even integrate a portable gaming device, to help playback and screen HD video, but putting HD on a regular DVD would be a great way to go!

So, it's exciting news, but entirely predictable.

The major Hollywood studios and their aligned manufacturers have been fighting over which format is best for HD delivery for years, and the battle lines were drawn as clearly and distinctly as possible. There is to be no compatibility between the formats. There are huge differences in storage capacities and added functionality. Content will not be released universally, and specific titles will only appear on specific formats.

The news means that those so-called format wars (between Blu-Ray advocates and HD-DVD apostles) may have been for naught. That's a real shame, as the confusion and uncertainty in the marketplace over the comparative benefits of the two competing formats has left many consumers and desktop digital video creators with cold feet, thus putting a drag on the development of effective high def distribution options.

But now, newly-exhibited optical disc recorders from Toshiba and Matsushita (Panasonic) are recording high-definition TV to conventional DVDs, something we were told could never be done. What was once impossible is now called HD REC and/or AVCREC. HD REC comes from the DVD Forum; AVCREC comes from the Blu-ray Disc Association. As you might expect, Toshiba's HD REC and Panasonic's AVCREC formats are incompatible.

The impossibility was because conventional DVDs didn't seem to have the capacity to hold an HD movie. A normal DVD holds around 4.7 GB of data per layer; an HD DVD disc can hold 15 GB and a Blu-ray Disc 25 GB.

But new processing chips and compression algorithms are available that can transcode video in real time into a much more efficient and space-saving format. (We've talked about video formats, compression schemes and bandwidth requirements before in DV Or Not DV; briefly, most of today's TV is encoded at MPEG-2, while these newer formats utilize MPEG-4, AKA, AVC.)

HD REC lays down a 4 Mbps (megabits per second) MPEG-4 AVC stream, while AVCREC in the Panasonic machines records at a higher 5.7 Mbps. Ironically, that should mean a better picture (from higher compression) but also less recording space (from greater data) on each DVD.

The manufacturers say that the new formatted discs and compatible machines can deliver about eight hours of HDTV from a single-sided Blu-ray Disc using MPEG-4 AVC – or roughly four times the amount of video than was possible with MPEG-2. But the format also makes it possible to store about two hours of HDTV on a conventional DVD.

When the enhanced DVD technology hits the marketplace with new-generation machines from Toshiba, Panasonic, Sony and the like, it's not certain when – or if - it will turn up in cheaper, DVD-only recorders. More likely is an initial slew of high priced, leading edge products – followed by the always anticipatable lowering of prices and broadening of offerings that comes with wider acceptance.

So the electronics giants have another war on their hands, but while they do battle over the new formats, other approaches to HD on DVD are emerging or have already emerged, so consumers are not necessarily caught in the middle.

Pinnacle Systems, as just one example, already offers AVCHD compression tools in its editing programs that let users burn their completed HD video to standard DVD media that can be played back by the latest HD or Blu-ray machines.

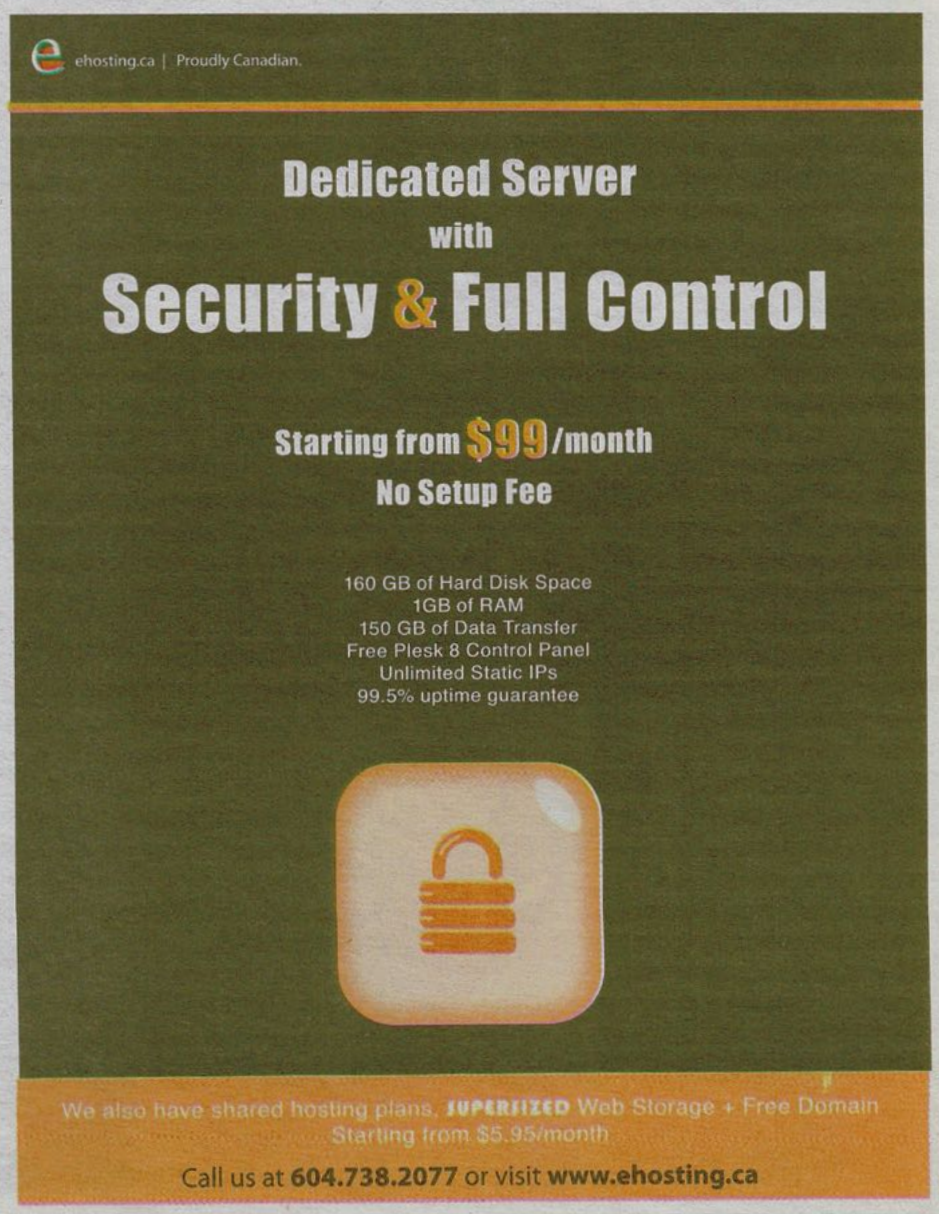
There's also VMD (Versatile Multilayer Disc) that increases a disc capacity by adding more recording layers. A multilayer VMD disc can store about 30GB of information, about equivalent to HD DVD. FVD (Forward Versatile Disc) also adds recording layers and an advanced compression system to enable high-def recording on a DVD-like disc. The HD-DVD itself has recently been specified as a triple-layer disc, pushing its capacity to 30GB as a result.

There's even a CH-DVD (China High Definition DVD), with specifications for a slightly different approach to hi def delivery.

No, you don't have to go to China to watch high definition. It's been a long, slow boat ride but HD delivery using existing media is coming.

By Lee Rickwood

Lee Rickwood is a freelance writer and independent video producer. He operates Word On A Wire, an independent company providing editorial, media production and consulting services to individuals and companies across North America. He can be reached at videodaze@goodmedia.com.



Professional data recovery in the PC ER

Getting your data back after a disaster

It's not every day that you can trash a laptop just to see if the information can be recovered, but in order to test the services of Ontrack Data Recovery, that's exactly what we did.

We took an old IBM notebook and loaded it with 1GB of data: photos, music, documents, email messages and address book contacts. After making a fresh pot of coffee, we spilled a mug or two over the keyboard. Then we took it out to the parking lot and accidentally "dropped" it on the pavement. A few games of catch later, and the laptop was officially destroyed, broken to bits, scattered across the parking lot. We salvaged the hard drive, packaged it carefully in bubble wrap, mailed it to Ontrack and waited for the results.

Two days later, we received a full, pre-service evaluation via email; a couple days after that, two DVDs containing about 5GB of recovered data arrived back at our office. Not only was every file we stored on the hard drive for the test run recovered, but older, previously deleted files we didn't even know existed had been found.

Kroll Ontrack is an international electronic discovery and computer forensics services company based in Eden Prairie, Minnesota. Under the name Ontrack Data Recovery (www.ontrackdatarecovery.com), the company offers data recovery services and software for businesses and individuals.

The most common problem Ontrack deals with is physical hard drive malfunctions, which the company refers to as a "head crash," says John Riddell, Operations Manager for Kroll Ontrack's Canadian headquarters in Toronto. Another problem, specific to companies, is having one or two drives failing in a RAID. This requires immediate assistance, he says, as several hundred users will find themselves without access to their servers.

But data recovery services are not just for corporations. About 50 per cent of Ontrack's business comes from personal laptop disasters. Portable in nature, laptops will often incur damage from sheer mistreatment. For example, people throw them in the backseat of their cars, use them in unclean environments, store them in dusty corners or even stack a pile of papers on top, says Kroll Ontrack. Some might accidentally spill a cup of coffee on the keyboard, or a glass of wine.

Natural disasters are another category, which includes flooding and electrical damage from lightening storms. According to Riddell, extreme temperatures are a common source of damage in Canada.

Ontrack also deals with crime-related incidents. For example, when a police agency serving a search warrant arrived at the business suspected of electronic corruption, the suspects frantically attempted to "destroy the evidence" by trashing a computer in the back room before the police could crash the door down, explains Riddell. The data was recovered nevertheless.

When asked for Ontrack's data recovery success rate, Riddell replied that it's very difficult to come up with a number. If a data recovery company actually posts a success rate, you should be wary, he says. Reputable companies will say it's too complicated to tell.

User-related problems, such as accidentally deleting files or reinstalling the wrong software, has the greatest chance of recovery success. However, a hard drive crash is the most difficult disaster to recover data from. If your hard drive crashes when your computer isn't attended to, explains Riddell, the damage will even get worse. Metal spinning on metal at thousands of revolutions per minute can eventually grind a hole into the media, making it physically impossible to recover any data from it.

Depending on your specific disaster scenario, the damage can likewise increase with you there. Here are

some examples of what NOT to do when a disaster occurs: do not shake, disassemble or attempt to clean the hard drive; do not use common software utility programs on broken or water-damaged services; do not operate on visibly damaged devices; do not attempt to dry water-damaged media by opening it or exposing it to heat.

For example, damage from liquid will increase as the hard drive dries out. The contaminants in the liquid oxidize the drive, explains Riddell. Flooding isn't as bad, he adds, because the drive is sitting in water and not getting the opportunity to dry out. If you experience water damage, you should package your device and send it to a data recovery service as soon as possible, preferably before the unit dries.

Of course, all of this can be avoided by simply keeping a back up of your files. When asked for a data recovery tip, Riddell replied, "Buy an external hard drive." Perform your backups on a weekly basis and make sure to store the backup media away from your computer so if a natural disaster occurs, at least one of them is protected. Another suggestion is to place your most valuable data in one specific folder so you know exactly where it is stored and can easily find it.

Periodically defragmenting your hard drive is another option to consider, which will clean up your file system and place everything in a recognizable chain. When data is written on a hard drive, it gets scattered (fragmented). This may help your computer speed, says Riddell, but it's not good for data recovery.

Other words of advice from Kroll Ontrack include: keeping your computer in a cool, dry place to prevent

your hard drive from overheating; investing the $30 for a dependable surge protector, not a power strip, to protect your computer against lightning storms; using dedicated circuits; and checking your digital photos at least once a year to make sure they're still readable.

But say you are just like all those other people out there who know they should back up, but don't. What's the first thing you should do when disaster strikes?

With Ontrack, you start with a phone call. The company will assess your problem over the phone by asking you exactly what happened and then provide their suggestion. You may be able to solve the problem with DIY software (a free trial is available online from Ontrack). A second option, if the damage isn't physical, is to receive diagnostics and assistance remotely via one of Ontrack's remote data engineers. Your third option is to send your hard drive (or the entire machine if you're not comfortable removing the part yourself) directly to the company. If this is the case, Ontrack will provide you with a quote range based on your hard drive capacity, a job number and email instructions for delivery.

Upon arrival, your hard drive will enter the evaluation phase. You will receive an email with a password and login information that will allow you to track the evaluation process online as it takes place, which takes two to three business days for standard service (priority, weekend, emergency and on-site is also available). When the pre-service evaluation is complete, you receive an email with a quote, listing the type of damage and how many good files, repaired files and partial files can be recovered. Online, you can access

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Top 10 Data Loss Disasters

Taken from a global poll of Ontrack data recovery experts, these are the top ten disasters received by Ontrack in 2006. In every case, Ontrack successfully recovered the data.

1. **Sock it to Me**
   Although the circumstances of the original data loss were unremarkable, the problem was intensified when the customer shipped his drive to Ontrack in a pair of dirty socks. The old socks didn't provide the necessary protection during shipping and the resulting damage made the recovery more challenging than normal.

2. **Squeaky Drive Gets the Grease**
   A university professor heard a squeaking noise from the drive of his new desktop computer. To solve the annoying problem, he opened the case and sprayed the inside of the drive with WD-40. Although successful in stopping the drive from squeaking, his actions also prevented the drive from booting up.

3. **Finding Nemo**
   A customer returned from the vacation of a lifetime in Barbados to discover that he couldn't access any of the snorkeling photos he took on his new "waterproof" digital camera. It seems the camera wasn't as waterproof as advertised.

4. **Tenth Time's the Charm**
   A man reformatted his hard drive not once, not twice, but ten times before he realized there was some valuable information he needed recovered.

5. **Hard Drive Speed Bumps**
   People continue to leave computers and hard drives in the path of moving vehicles. Ontrack recovered data from a laptop that was run over by a "people mover" at the airport, and several external hard drives stuffed in a backpack that was backed over by a truck.

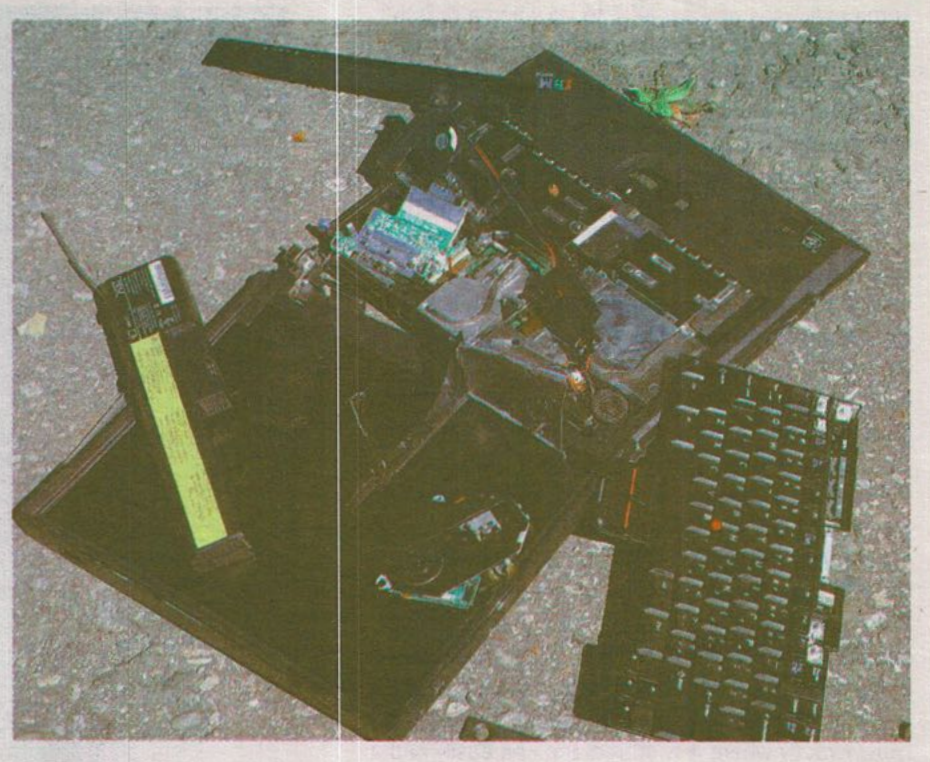
6. **Beware of Bananas**
   A customer left an old banana on the top of his external hard drive, which proceeded to seep its contents into the drive, ruining the circuitry. The drive would no longer run, but Ontrack was able to clean the drive and repair the circuit bard so the drive would spin long enough to recover his data.

7. **Rescuing the Research**
   A leading UK research university suffered a catastrophic data loss after a fire broke out in the computer science department on a weekend morning, damaging computer equipment with smoke and water from the fire department's efforts.

8. **Not a Jolly Occasion**
   British comedian Dom Joly, presenter and co-creator of Trigger Happy TV, dropped his laptop, damaging a hard drive that held five thousand photos, six thousand songs, half a book he was writing and all of his old newspaper columns.

9. **Washed the Data Away**
   On a flight from London to Warsaw, a passenger packed his laptop and toiletries in the same bag. Unfortunately, his shampoo leaked and flooded everything in the bag, including the laptop, causing the hard drive to fail.

10. **Helicopter Hi-jinks**
    Employees of a global telecommunications company dropped a laptop computer while working from a helicopter in Monaco.



a complete listing of the recoverable files including names, conditions and properties. After reviewing the report, you fill out the authorization form to proceed with the service. The average cost for recovering data from a notebook is $1000. The evaluation costs about $80.

You have the option of receiving the recovered data on a CD, DVD, external hard drive (which you can purchase from Ontrack seperately) or a hard drive provided by yourself. Ontrack will also store a copy of your recovered files on their secure servers for 30 days, after which it is securely deleted.

This raises a second question. What can you do to permanently delete files that you don't want anyone to recover? If you are about to donate your computer to a non-profit organization or send it back to the manufacturer for recycling, for example, make sure to first follow these steps.

You want to make sure you remove personal information, but that doesn't just mean deleting your documents folder. Don't forget to delete information stored in your Internet browser cache, cookies and history; your email messages and address book contacts; and uninstall your nontransferable software. As we have learned from Ontrack's data recovery service, deleted files can be recovered. To make these files unrecoverable, you also need to overwrite all the sectors of your hard drive, which is accomplished by running a disk-cleaning utility – not by physically smashing your computer to bits. (Ontrack sells Data Eraser software that will physically erase all of your data.) For even further peace of mind, Riddell suggests physically removing the hard drive and destroying it by taking out the platters that hold data with a hammer and scratching the media.

By Jennifer Kavur

"Tough" USB flash drives can survive the greatest disasters

Back up your files on media that will survive drops, extreme temperatures and water. With the adrenaline still pumping, we tested the two toughest flash drives on the market to see if they held true to their claims.

While the Flash Survivor GT ended up bruised and the ToughDrive crooked, both passed the durability test and continued to protect the hundreds of photo, music and document files stored inside.

Corsair's CNC milled aluminum casing and hollow tube better protects against pressure and weight; while ATP's synthetic polymer housing is excellent for resisting drops and heat. If can do with less than 4GB of storage and looking for something under $100, you'll have to go with the ToughDrive. But if you need an 8GB model, the GT boasts faster read/write speeds and is priced lower than the comparable 8GB from ATP.

	Corsair Flash Survivor GT www.corsair.com	ATP ToughDrive www.atpinc.com
Price	GT 8GB US$129.99, 4GB US$59.99	512MB US$19.99, 1GB US$29.99, 2GB US$49.99, 4GB US$89.99, 8GB US$169.99
Read speed	34MB/sec USB 2.0 for 8GB GT (specs for 4GB not provided)	30MB/sec USB 2.0, all sizes
Password protection software built-in	Yes	Yes
Waterproof	Yes, up to 200 metres	Yes
Shockproof	Yes	Yes
A full laundry cycle: cold water with TIDE detergent in a front-load washer followed by 45 minutes perma press in the dryer.	Lost one of the exterior rubber molded cap collars in the dryer, but all the file contents remained perfectly in order.	Looked, and performed, better than new.
Repeatedly run over by a Volvo V70 station wagon.	The outer metal tube received some nicks and bruises, but held up under the weight. The other exterior rubber collar held on by a thread.	The connector was bent out of shape and wouldn't fit into the USB port. But after bending the kink out with a Swiss Army Knife, it became perfectly operational again.
Dropped from a five-story apartment balcony onto a pavement parking lot.	A few extra scratches, the remaining rubber cap collar was still holding on. More importantly, so was the functionality and the files.	Dust it off, and you'd never know it made the jump.

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Digital Photography Tutorial

Creating monochromatics: Digital colour photos to B&W

Autumn has distinct phases. That glorious colour spectacle that nature puts on when the leaves first turn colour is followed by a more sombre, even stark display of colourless forms often accentuated by grey overcast skies. Even on sunny days, the sun is lower so the shadow patterns are longer than they would be if the picture was taken at the same time in the long forgotten summer months.

As photographers, we learn to to make our own photo ops regardless of the weather or season. Thus the days of November may be sombre, but they can also present opportunities for some dramatic images. For example, leafless branches against a uniform sky creates a very high contrast image. These might look fine as colour images, but often they can gain extra punch as a black and white photograph.

Some digital cameras have a B&W mode, which strips away the colour information as part of the in-camera imaging process. Image editors also have tools that allow you to take a colour image and strip out the colour, and for the ultimate in tonal control, the image editor method is the way to go.

Photoshop CS3 has a comprehensive B&W conversion palette. This is quite a powerful tool but previous versions of Photoshop and most image editors with saturation and colour channel controls allow you to perform similar conversions.

The simplest methods of converting a colour image to black and white are to convert the colour mode to monochrome, or access the colour saturation tool and set saturation to zero. What you are doing in these cases is stripping out the hue values of the red, green and blue colour channels, leaving only the average brightness values – in other words, a continuous tone black and white image.

While this may be the quickest method of getting to B&W, it doesn't create the optimal results for a truly spectacular B&W image. One useful tool to take your B&W conversions to the next level is the Channel Mixer tool. When you set the output mode to monochrome you end up with a B&W image but the channel mixer allows you to tune the tonal distribution by adjusting the relative contributions of the brightness values in the red, green and blue channels.

If this doesn't make sense to you, simply open any RGB colour image in your image editor, access the channels palette and look at the image, channel by channel. When you look at the red channel you'll see that the blues in an image are very dark, almost black in some cases. However in viewing the blue channel you'll see those same areas will be very light, almost white. If you look at important parts of your image channel by channel, you can see the relative contributions to tonality that they will contribute to the final B&W image. Skin tones look darker in the blue channel but lighter in the red channel. The green channel looks closer overall to what you'd expect a black and white photo to look like. In adjusting the red, green and blue sliders in the channel mixer, you'll see readouts that indicates the percentage of each channel information that makes up the image. You should ensure that the total of the three channels stays close to 100 per cent, otherwise you will blow out (if you go way over 100 per cent) or lose shadow detail (if you go way under 100 per cent) in your grey scale conversion.

If you want to refine your image even further, you can use selections or masks on a number of layers to apply one kind of mix to one area of an image and quite a different mix to another area. The possibilities are only limited by the amount of time you want to devote to the process.

Another technique that lends itself to autumn themes also involves the saturation tool. But here, the trick is not to set the saturation slider all the way to zero but to reduce it to a point where there is just a hint of colour. This can be very effective for subjects like roses that have dried on the vine – a literal interpretation of the faded rose.

Yet another variation using the channel mixer tool is a black and white image with one element that's in colour. There are many applications of this: a portrait where everything is B&W except the subject's face or a random assortment of pebbles on a beach, all in B&W except for one which is colour. There are a few ways of doing this effect. One simple way is to use one of the selection tools to outline the object, then invert the selection. This inversion process does the opposite of what you did, in other words, now everything is selected except the object you originally outlined. Then if you apply the channel mixer tool with monochrome output to the image, everything but the object you selected goes to B&W, and the object you selected remains as the only colour element in the edited image.

By David Tanaka

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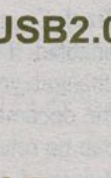

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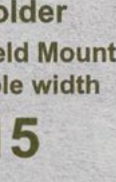

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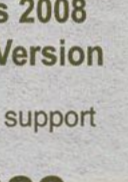

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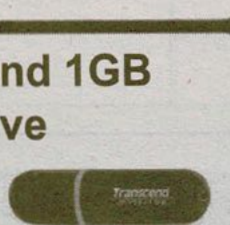

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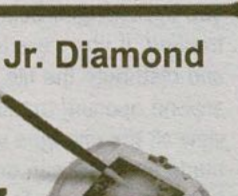

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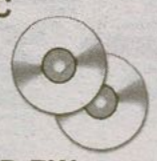

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Keeping Office Secure

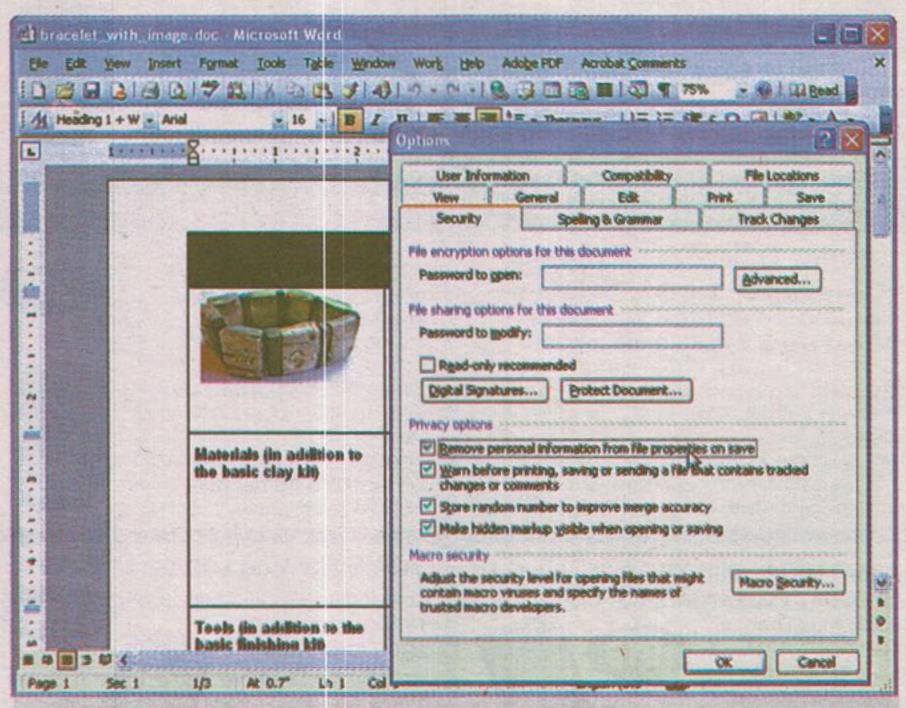
By default, your documents may be saying too much

Anyone working with any Office application and sharing the data with others needs to be aware of possible security issues. Even a process as simple as emailing a Word document with a press release or contract in it can open up a veritable can of worms if you have not taken care to ensure that information which you did not mean to include in the document is not in it. Annoyingly, it's only too easy to compromise yourself and your organization by not understanding what can go wrong.

Data stored in Word files

A number of issues with Microsoft Word cause you problems. One of these is the Word Fast save feature which, if enabled, makes saving a document much quicker. Unfortunately, this tool works by saving the cumulative changes that you've made to the document and it doesn't write a totally up-to-date version. Over a period of time, not only can your file size balloon alarmingly, but inside the file is a history of every change that you've made to it. If, for example, you made changes to a contract and added clauses more favorable to you, anyone looking at the file could uncover this information. It's as easy as opening the file in a text editor like WordPad and sifting though the detail stored there. The smart option is to disable the Fast Save feature by choosing Tools > Options > Save tab and disable the Allow Fast Save checkbox.

Word documents, by default, contain a wealth of personal information including the document's author and the names of everyone who has made changes to it while the Track Changes feature was enabled. You can remove this information but not set the applications to stop recording this data; you need to remove it for every document you work on instead. Choose Tools > Options > Security tab and enable the Remove personal information from file properties on save checkbox. Once enabled for a file, the setting stays with the file but doesn't affect the global Word settings.

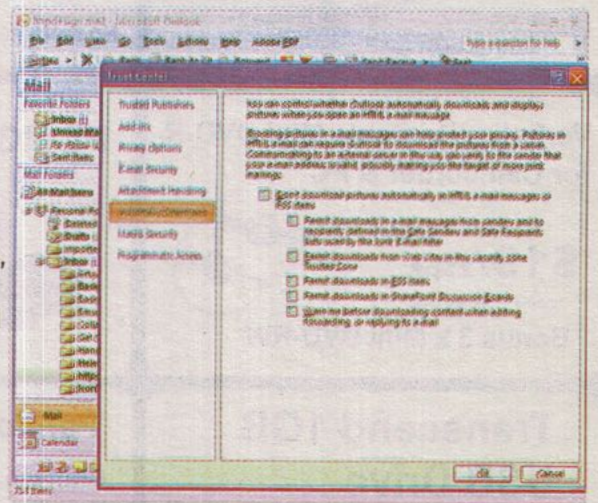


Word 2007 includes a new Document Inspector that displays information about hidden content in your documents.

This doesn't remove all the personal information and, if you are using Microsoft Word 2003, there is an Add-in you can use that will remove more information still. You can download it from here: http://tinyurl.com/4mnrw. The website includes details about the data the Add-in can remove and how to use it – it isn't particularly easy to use and must be run on each file individually. The Add-in works with Word., Excel and PowerPoint 2003/XP files.

Tracked changes

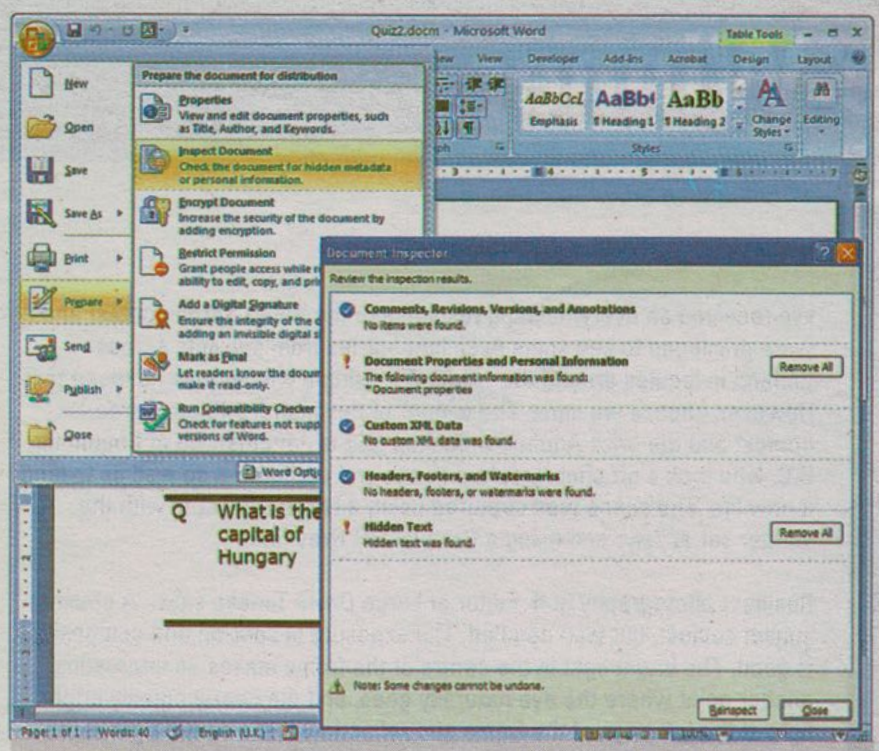
Another consideration with Microsoft Word files is the information stored by the Track Changes tool. When enabled, it tracks all the changes you have made to the document so that they can be retrieved and undone, if desired. It's possible to have Track Changes enabled but configured so you can't see the changes being tracked. If you were to save and distribute the file, anyone opening the file can view all the changes you've made and they can do this from inside Word. To avoid the possibility that you will save and distribute a document with Track Changes stored in it, choose Tools > Options > Security tab and enable the "Warn before printing, saving or sending a file that contains tracked changes or comments" checkbox. Once you enable this option, it affects all documents and, if you save or print a document containing tracked changes, it warns you that you're doing so.



Outlook, like Word, Excel and PowerPoint includes detailed security settings in its Trust Center that you can configure to work for your needs.

Password protection

Like other applications in the suite, Word has a tool for password protecting a file. You can protect the document so it cannot be opened or protect it so that it can be opened but



Word 2003 offers the option to remove some personal information from a file before saving.

not changed. To do this, with the document open choose Tools > Options > Security tab and type a password to prevent the document being opened or one to prevent it being modified or edited. Take care to use a password that contains a mixture of numbers and letters and that is more than seven characters. There are password cracking programs available that can break Word passwords so the longer the password, the less easily it will be cracked. On the flip side, make sure you remember your password because if it's that good you won't be able to retrieve it either if you forget it.

Word viruses

Over the years, Microsoft Word has been the target of a number of viruses. One way to help prevent problems is to regularly update your program by choosing Help > Check for Updates. You can also configure Word so that macros will not run automatically and so you're prompted to run them or disable them. To do this, choose Tools > Macros > Security and set the level to medium, high or very high depending on how careful you want to be.

Other applications

Security issues extend beyond Microsoft Word to Excel and PowerPoint. Like Word, you can password
protect an Excel file, which you may want to do if it contains sensitive information that should not be accessed by anyone without permission to do so. Like Word, you can set the macro security level in Excel and in PowerPoint to protect against macros running without warning.

Office 2007

In the new Office 2007, there are more protections available than in earlier Office versions. For example, you can inspect a Word document for hidden data or personal information using the Inspect Document option. To do this, click the Office Button, choose Prepare > Inspect Document. Click the Inspect button and the Document Inspector will run and show you everything it found in the document. You then have the option to remove whatever turns up.

In Microsoft Office 2007, the Trust Center controls a lot of security settings for the individual programs. In Word, Excel and PowerPoint it can be accessed by clicking the Office Button, choose Word Options (or Excel Options, etc.), click the Trust Center group then the Trust Center Settings button. In Outlook 2007, choose Tools > Trust Center. The Trust Center options appear in a dialog and here you can configure if macros can be run, set up trusted publishers and locations and manage ActiveX controls.

It is sensible to make yourself aware of the possible security and privacy implications of working in Office. There are things you can do to prevent issues from arising if you understand what they are and where to find them.

By Helen Bradley

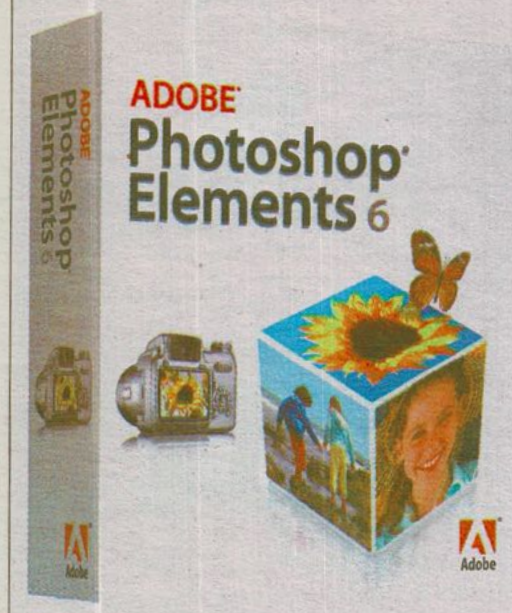
PhotoSpree Winner

We received an overwhelming response to the Photo Spree contest and were privileged to see some excellent entries from entrants across Canada in locales around the world. Choosing a winner was no mean feat. However, choose we must. The winner of this month's Photo Spree contest and the prize Adobe Photoshop CS3 is Jonathan Ho of Coquitlam, B.C. who took a oft photographed scene and captured it so well as to lend it new life. The scene was captured using a Nikon 8700 at f8 with the shutter set at 7sec and using a Gradual ND Grey filter.

Resident photography buff, Editor at Large David Tanaka says: "A common sunset subject, but well handled. The exposure is spot-on and composition is good. The bright light in the centre of the frame makes an interesting anchor point where the eye naturally goes, and the nearly equally bright light at the left edge of the frame and reflection of the centre light in the water forms a triangle that leads you back into the picture."

Congratulations, Jonathan!

The challenge: Changing seasons



Win! Adobe Photoshop Elements 6

The top three pictures as judged by HUB: The Computer Paper will receive a copy of Adobe Photoshop Elements 6.0 for Windows.

Adobe Photoshop Elements 6.0 is a budding digital darkroom dream and includes easy to follow tutorials and guidance for many digital photo manipulation tasks like removing blemishes or dust and scratches from pictures. Also in the box are enhanced image selection interfaces, improved panoramic image creation and a simple means for blending elements from multiple images in to one. Improved photo organization and tagging elements are also among the many improvements offered with this version.

Adobe Photoshop Elements 6.0 is the result of Adobe listening to customer feedback to offer more of the powerful image manipulation functions that users want to see without complicating matters.

THE RULES: You must use a digital camera to capture the subject. Work can be submitted via email (contest@ppublishing.ca). Accompanying your photo should be the make and model of the camera you used, the names of any software you used to modify the image and, if possible, the f/stop and shutter speed you used to take the photo.

Submit your photographs, along with the information from the form below, by Dec 14, 2007. You can submit up to three photographs, all of which must be accompanied by a submission form. Entries must be submitted via email. Files should be no bigger than 500KB and no smaller that 300KB. One photo per email.

Prizes must be claimed by Jan 17, 2008. Winners must provide valid identification upon claiming prize. The prizes awarded are not transferable and cannot be redeemed for cash. To enter and to be eligible to win, persons must be residents of Canada, and not employees or be domiciled with an employee of Piccolo Publishing, its affiliate companies, or advertising or promotional agencies. The winners will be selected by HUB on Dec 17, 2007 from among all eligible entries received on or before contest close date. Winners will be contacted by telephone or email. In the event that they cannot be contacted within the first week following the contest, another entrant will be selected. All entries become the property of HUB and may be used in subsequent advertisements for the contest. All entries must be submitted by their artist and must be original work.

HUB's Photo Spree contest form. All submissions must contain this information. Send to contest@ppublishing.ca.

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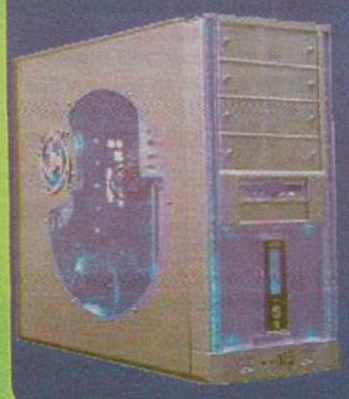

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Gears of War continues the grind on a new platform

An exclusive look at the PC edition of the revolutionary shooter from inside Epic Games studios

Epic Games, the studio behind renowned PC franchise Unreal, surprised fans when the studio's latest opus, Gears of War, was developed and released for a console—the Xbox 360—last fall.

The sci-fi shooter was explicitly designed for a couch-bound experience, reducing the dependence on split-second timing and accuracy afforded by a keyboard and mouse by introducing a strategic covering mechanic that afforded excellent targeting ability when stationary while reducing weapon precision when running.

It might seem surprising, then, to see Gears of War come to Windows PCs this fall. However, after visiting Epic's North Carolina headquarters for a Canadian exclusive preview of Gears of War for PC, we can happily report that Windows gamers will be in for a treat when the game is released this month.

The first thing we noticed was how good it looked. Hailed as one of the most gorgeous and cinematic console games ever made, the PC edition, running at a maximum resolution of 1900 x 1200 on a tricked out box, puts the Xbox 360 version to shame. The scars and cracks on our tree-necked heroes' war-battered faces are so authentic that we felt as though we could run our fingers through them, and the game's sprawling and dilapidated urban locales are filled with authentic concrete and stone textures and a terrific amount of debris detail.

But there's more than just improved graphics. Epic created five new single player chapters just for the PC version, effectively adding 20 per cent more length to the campaign mode. Only one of the journalists at the preview event managed to finish the new content—which includes an epic battle with the monstrous Brumak beast previously seen only in Gears of War television commercials—in the two hours we were given to play.

We were also shown a pair of new multiplayer maps (the game ships with all existing Xbox 360 maps plus several new ones) as well as an original multiplayer mode that plays like team-based king-of-the-hill with a twist: Hill zones appear in defensible areas. As one Epic programmer put it, "It lets you protect the position and not have your ass hanging out in the wind while you do it."

And if you don't like any of the maps, new or old, you can create your own. Players will have full access to the latest version of the Unreal game engine to create their own mods and levels. One of Epic's designers demonstrated how easy it is not only to create simple maps, but also to insert the kind of barriers the game uses for its all-important cover and mantling mechanic.

However, the most impressive demonstration we saw was the way a player can swap from keyboard and mouse to gamepad on the fly. The game can distinguish with each passing moment whether you're using one control method or the other, and on screen cues are dynamically updated so that you are never told to touch the space bar when you're holding a gamepad or touch the A-button when playing with a keyboard and mouse. We saw some players switching between the two depending on the weapon they were using. One player even used both at the same time.

But, regardless of how you choose to play, one thing is certain: The patience of Windows gamers has paid off. Gears of War for the PC is everything it was on the Xbox 360 and more.

By Chad Sapieha

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Olympus E-3: start spreadin' the news

New York – For Olympus fans craving pro-oriented gear to go head to head with the latest products from competing camera makers, the wait is over. Olympus chose the American Museum of Natural History in New York City as the launch site for its E-3, the long-awaited successor to the five megapixel E-1.

The E-3 should make Oly fans smile – a lot. It bristles with innovation.

Some highlights:

- 10.1 megapixel Live MOS sensor
- mechanical image stabilization through gyro-mounted sensor assembly
- 100 percent image view plus 1.15 x viewfinder magnification for a huge view through the eyepiece
- swing-tilt fully articulated 2.5 inch LCD viewscreen means LiveView real time preview is now truly useful for waist-level, above the head or worm's eye view composing
- 11-point focusing system with options for selecting single points, grouped point zones or all 11 points together that work on both vertical and horizontal axes
- magnesium alloy shell with dust and moisture sealing on all openings
- five frames per second continuous shooting performance, and up to 1/8000 second shutter speed

After some brief statements by Olympus executives and video intros of five pro shooters, it was showtime. The camera maker set up five shooting locations inside and outside the patio area of the museum and the photographers highlighted five key features of the E-3, from dust mitigation through the Supersonic Wave filter system to the crazy shooting angles made possible by the articulated LCD screen.

Around the stations there were enough E-3s for reporters to try. These were outfitted with a new Zuiko 12-60 mm (24-120 equiv.) f2.8-4.0 lens, one of three the company also announced. The other two are a 14-35 mm (28-70) f2.0 and a 50-200mm (100-400) f2.8-3.5.

The E-3 is big and hefty compared to a camera like Olympus's mighty mite E-410 SLR, weighing in at 810 grams, body only. But it is very well balanced and the 11-60mm is a natural mate for it although an Olympus rep said the E-3 will be sold body only, rather than as a kit, at least initially.

The Olympus E-3 will be available in Canadian retail stores beginning in November. The estimated selling price for E-3 (body only) will be approximately $1,800, which is between the new Nikon D300 (around $2,000) and Canon 40D (around $1,400).

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Broadband Ontario Incorporated	http://www.broadbandontario.com	866–870–0763	sales@broadbandontario.com	✗	✗	69.99	49.95	✗	✗	✗	✓	✗
Burlington Network Services	http://www.bserv.com	800–263–8433	allang@bserv.com	199	✗	✗	✗	✓	✓	✓	✓	✗
Canada.CrosswayISP	http://Canada.crosswayisp.com	877–281–3672	admin@crosswayisp.net	✗	✗	✗	✗	✓	✓	✗	✗	✗
Canquest Communications (Online) Inc	http://www.gocanquest.com	519–351–8647	sales@canquest.com	✗	✗	✗	✗	✗	✗	✗	✗	✗
Caylix Internet Solutions	http://www.caylix.com	604–792–6563	info@caylix.com	✗	✗	✗	49.95	✓	✓	✓	✗	✗
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Galaxy Broadband Communication Inc.	http://www.galaxybroadband.ca	905-827-8583	sales@galaxybroadband.ca	✗	✗	79.99	✗	✗	✗	✗	✗	✗
Hey-Ya! Dialup	http://www.hey-ya.net	920-465-0231	sales@hey-ya.net	✗	✗	✗	✗	✗	✗	✗	✓	✗
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Ideal Access	http://ideal-access.com	888-478-2733	info@ideal-access.com	✗	✗	✗	✗	✓	✗	✗	✗	✗
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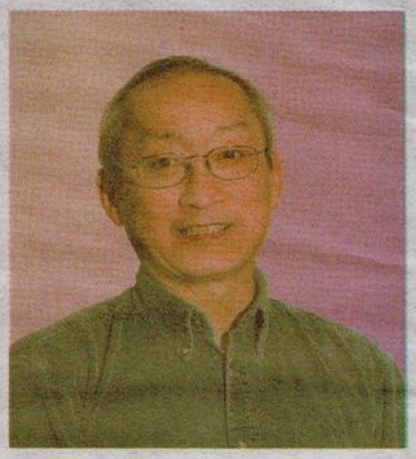
the last byte

Editor-at-large David Tanaka's take

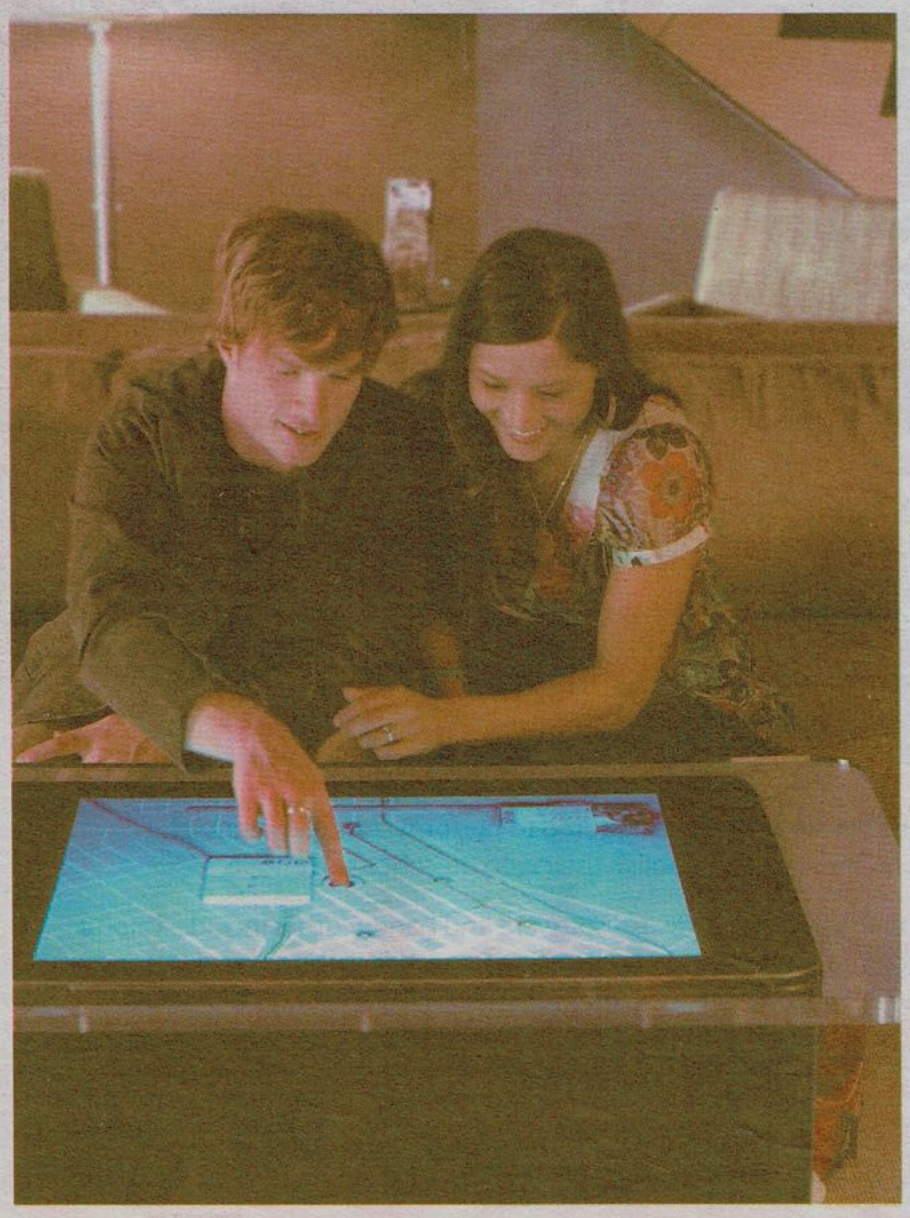


On the surface, it looks pretty cool. Microsoft Surface, that is. Announced a few months ago, Microsoft Surface "breaks down traditional barriers between people and technology," states Microsoft in its May 29 news release.

I remember seeing the announcement, then I forgot about it until I saw Surface in action on one of those criminal investigation TV series – at least it reminded me of Surface. It was likely the work of the FX department but there was enough of a similarity to force my brain to get off the couch and say "Hey, I've seen that somewhere before."

MS Surface, if you haven't heard of it before, is a new kind of interface where the entire table-sized (30-inch) screen becomes an interactive interface. On the TV program, the investigator was moving images, stacking them, resizing them, etc. on the screen just using her fingertips. At one level it doesn't seem like much more than an evolutionary step in touch-screen technology: you point, click, drag and drop and otherwise move items across the screen but instead of using a mouse or a stylus you use your finger.

Pointing at things in the hopes of getting them doesn't sit altogether comfortably with me. I think it is a somewhat infantile response to the world – me want. Call me a neo-primitive but I think compared to the finger point interface, devices like keyboards and mice and graphics tablets elevate what we can do on a computer to a pretty high level. Can you imagine trying to write the great Canadian novel with



fingerpaint? Pointing is a somewhat passive and consumptive way of interacting with the world, compared to even something like the Wii spatial controller.

However, my intention is not to waggle my teeny finger at Surface because there is much more under the surface, as it were, and some of it is quite innovative indeed. Microsoft's demo of Surface was still on its web site when I wrote this (www.microsoft.com/surface) so you can see it in action if you wish. You can see the demo that intrigued me, in which a lady walks up to another lady seated at a Surface computer and places her cell phone on the screen. The seated lady moves a digital photo under the phone and presumably – slurp, the image is uploaded to the phone. Other parts of the demo show similar processes: someone puts a digital camera on the Surface surface and images appear to spread out under the camera – automatic downloading. Then there's the guy that plans his evening on the town by moving virtual show tickets, route maps, etc. to his smart phone by dragging them under his phone with his fingers.

A big part of me wants it and wants it to work, but a little part of me also remembers other "transformative" technologies that didn't or haven't quite delivered on their promise – infrared PDA synching and Bluetooth being ancient and modern examples. In fact, the road to computer perfection is littered with half-successful attempts to displace the keyboard with something more "intuitive" or "user-friendly." Think of the adventures we've had with voice dictation and voice command and control, gestural input systems, cursive handwriting recognition or even eyeball controlled navigation. Each of these have by no means been flops. In fact they have provided useful advances for niche applications – if you are mobility impaired, better voice input technology can only be a good thing. But a magic bullet for the masses? I think not.

The human hand is a wonderful construction and to focus on what we can do with just the tips of two or three fingers seems to me a little limited. So, smarty guy, what would I have Microsoft do? I'd like to see a system where the computer could understand the state I'm in when I drum my fingers impatiently on the desk. The operating system would understand: "This guy is starting to freak out, let's divert the computing cycles away from all those background tasks and get his pathetic Photoshop action done before he bursts something." That to me would be putting true power into the digits.

David Tanaka

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